codex

USER GUIDE

VAULT S
ADMINISTRATOR GUIDE

REVISION 22.01.2013

Safety Warnings

Please observe any warnings and follow all instructions.

Do not use this equipment near water and clean only with a dry cloth.
Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
Do not install near any heat sources such as radiators, heat registers, stoves, or other equipment (including amplifiers) that produce heat.
Do not expose to excessive vibration, or drop this product.
Do not defeat the safety purpose of the polarised or grounding-type plug. A polarised plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade, or the third prong, is provided for your safety.
If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
Protect the power cord from being walked on or pinched, particularly at plug ends, convenience receptacles, and the point where they exit from the equipment.
Only use attachments/accessories specified by the manufacturer.
Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the equipment.
Unplug this equipment during lightning storms or when not in operation for long periods of time.
Refer all servicing to qualified service personnel. Servicing is required when the equipment has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the equipment, has been exposed to rain or moisture, does not operate normally, or has been dropped.
To reduce the risk of fire or electric shock, do not expose equipment to rain or moisture.
To avoid electrical shock, do not attempt to open this equipment. Refer servicing to qualified personnel only.

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Codex does not assume responsibility for issues or losses due to misinterpretation of the information in this document, errors in this document, or incorrect configuration or installation of the equipment described herein.

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1. Introduction

Welcome to this guide for the Codex Vault, a next-generation modular solution for backup, archive, and dailies production that supports a range of digital camera systems.

An Administrator will set up the Vault and create User accounts for a specific project. The Administrator could be a data workflow specialist, and the Users could be members of the camera team.

The workflow for the project may involve several Tasks (e.g. copying, backing up, making reports) and the Administrator can design "Work Templates" which run the Tasks in a given order – when these Tasks are running they are grouped together as a Job. The User(s) operate the Vault and complete the Tasks guided by a series of on-screen prompts.

Depending on the size of the production, the Administrator may also be a User who interacts with the system on a daily basis. On larger productions the Administrator may configure the Vault initially, and then other Users will operate the system.

This guide will cover how to operate the Vault as an Administrator.

2. Glossary

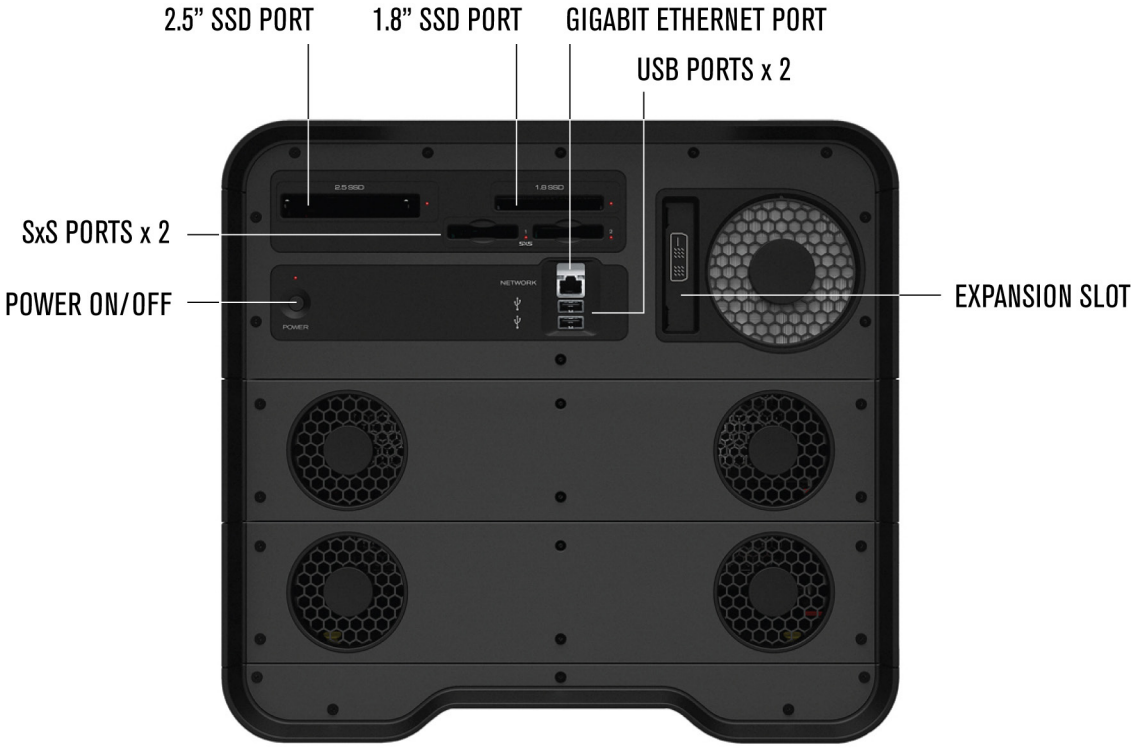
Capture Drive – a type of Codex Storage device, used with a Codex Onboard S Recorder and then brought to the Vault for checking, backup, and archive.
Clip – a clip represents a take, normally from "Action" to "Cut". The term Shot rather than Clip is used in Codex software, but they are essentially interchangeable. A Shot/Clip will contain image data, metadata, and possibly audio.
Clone (Task) – this process makes an exact copy of all the data from one media to another.
CRC32 – this is a type of checksum used in the software to verify the integrity of files as they are copied from one media to another
Datapack – a type of Codex storage device, used with a Codex Onboard M Recorder and then brought to the Vault for checking, backup, and archive.
Ethernet – a type of network connection between computers
Generate (Task) – this process copies files from the source media, containing as much metadata as possible.
Job – an active set of Tasks, as configured by the Administrator
LTFS – a type of formatting for LTO digital archive tape (Linear Tape File System)
LTO – a digital tape media used for data backup
Media – any type of removable data storage, disk or tape
Media Clear (Task) – this process deletes data from a specified media
Media Check (Task) – this process checks media for number and length of clips, and also valid timecode and roll information. It produces a report for the user, including a summary of any issues that have occurred.
Media Sign Off (Task) – this process should be run on media once all other required tasks are complete, and marks that all required tasks are completed with media so it can be cleared.
Media Verify (Task) – this process checks that disks in media are readable, and that CRC32 checksums are correct.
Metadata – information that relates to the image data such as timecode, roll, Exposure Index, White Balance, Comments, etc. Metadata is always carried through the system where possible into different file formats.
MUL – when media is formatted it is given a MUL (Media User Label). Shots recorded to the media then belong to this MUL, which can be though of as a group of shots. The Vault then processes shots in these groups, for operations such as cloning and archiving.
Network – a connection between computer systems, the most common type of which is Ethernet.
Reel – a metadata property of shots, with multiple shots being recorded to the same reel.
Roll – equivalent to Reel.
Shot – equivalent to Clip.
SxS card – a type of solid state media, used in the ARRI Alexa camera.
Task – one of several possible processes that can be performed on media, such as a Clone or Archive.
Transfer Drive – a type of Codex Storage device, generally used on the Vault to clone from a Datapack or Capture Drive
Work Template – a set of Tasks that form (part of) the workflow

3. Product Elevations

Top Elevation Showing touchscreen interface and LED Status ring.

Right Elevation

Left Elevation



Rear Elevation – DC Power Input (20-34V), SAS port

Front Elevation

4. Modules

There are several modules that can be used to build a Vault system. These are:

- **Process module** – this allows loading of various media such as Codex Datapacks, Capture Drives and Transfer Drives; SSDs, and SxS cards. It also includes a removable base that goes at the bottom of any Vault system.
- **Storage module** – this contains additional RAID storage that is used as intermediate storage for data prior to archiving and/or file generation.
- **Archive module** – this contains two LTO5 drives that can be used to make backups.

The Process module can function alone, but other modules can only be used with the Process module.

IMPORTANT – only disconnect and reconnect the modules of the Vault when the system is not powered on.

5. Power

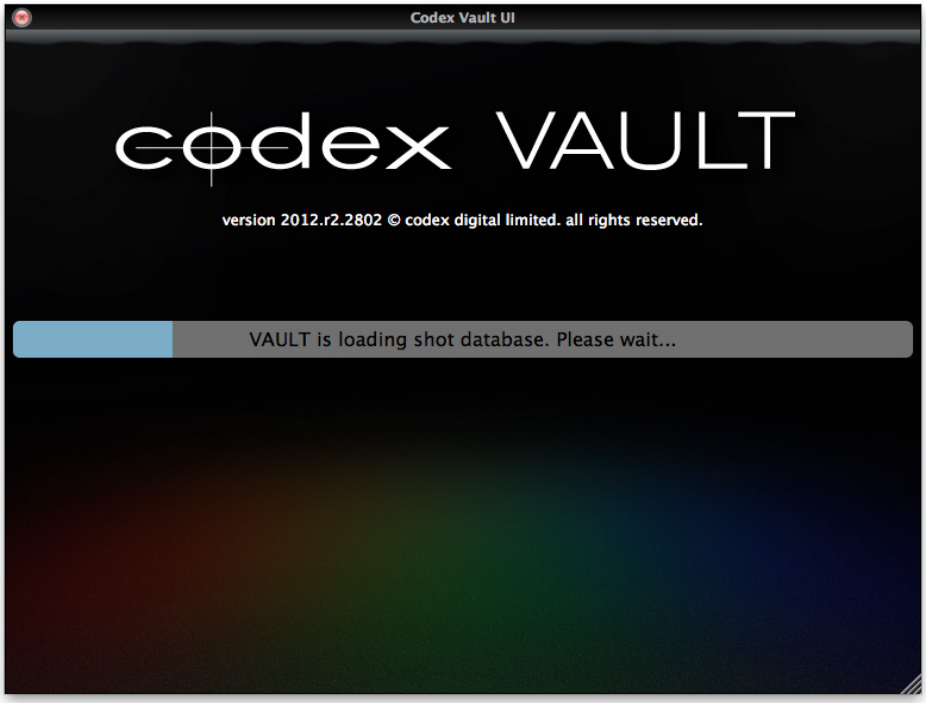
The Vault requires an input voltage of between 20V and 34V. The power required will vary depending on the modules being used. The maximum required is 500W.

Only the included Codex power supply should be used for the Vault when running off mains electricity.

Anton VCLX batteries are suitable for powering the Vault when mains electricity is not available.

6. Starting Up

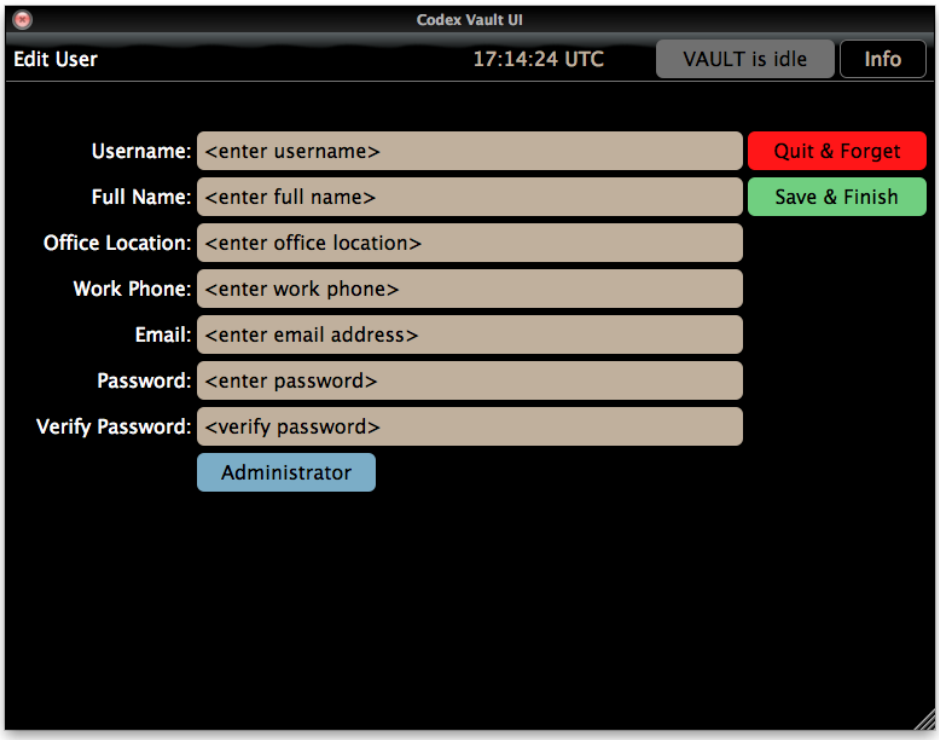
With a power source connected press the Power Button on the side of the Vault. The Vault takes around 1 minute to start up during which time you will see the Initialising screen:


Codex Vault UI
codex VAULT
version 2012.r2.2802 © codex digital limited. all rights reserved.
VAULT is loading shot database. Please wait...

When it has finished initialising you will be presented with the Logon screen.

7. Creating an account

The first time the Vault is started you will need to create a user account. It is recommended to enter information in all available fields:



Usernames must contain only alphanumeric characters and no spaces. If a Full Name is entered this will be displayed in preference to the Username for subsequent logins.

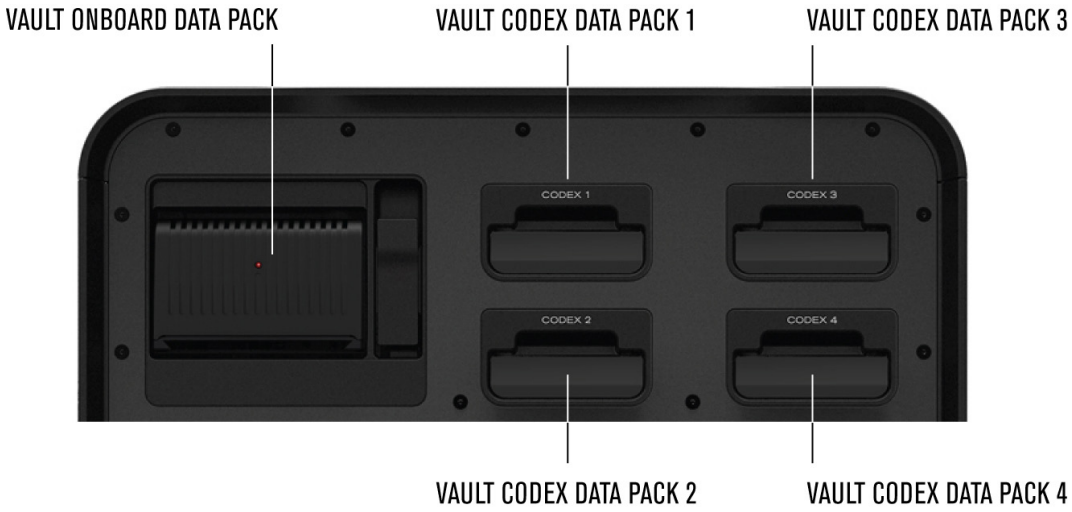
The 'Administrator' button highlighted in blue means the account you are creating will have administrative privileges (this is always the case for the first user account that is created). An administrative user can create/delete other user accounts, edit Work Templates, and change other system settings.

Once you have entered all your information select 'Save & Finish'.

8. Loading and unloading media

Following the correct procedures for loading and unloading media is very important. Failure to do so may result in damage to the media and/or compromise data integrity.

WARNING: Do not unload media when it is reading or writing.



8.1 Onboard Datapack

Loading – gently insert the Datapack fully into the port. The loading process will begin, and during this time the LED on the Datapack will flash orange. When the Datapack has loaded the LED will flash green.

Reading/Writing – the LED will be solid green when reading/writing.

Unloading – go to the Storage screen of the Vault User Interface, select the Onboard Datapack, and press Eject. While the Datapack is unloading the LED on it will flash red. When it becomes constantly red the unloading process has completed. Now pull the lever next to the Datapack fully to eject it from the port.

8.2 Capture Drive / Transfer Drive

Loading – gently insert the Capture Drive fully into one of the Codex ports. The loading process will begin, and during this time the LED on the Capture Drive will flash blue. When the Capture Drive has loaded the LED will flash green.

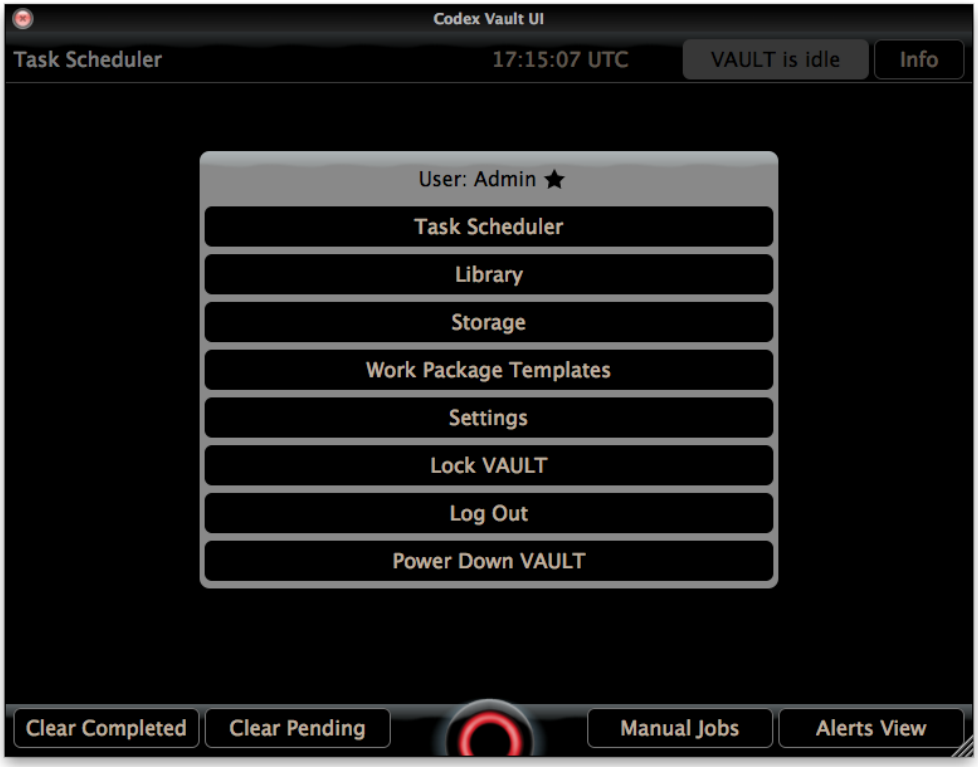
Reading/Writing – the LED will be solid green when reading/writing.

Unloading – go to the Storage screen of the Vault User Interface, select the Capture Drive, and press Eject. While the Capture Drive is unloading the LED on it will flash blue. When it becomes constantly blue the unloading process has completed. Now pull the Capture Drive to remove it from the port.

9. The Main Menu

You will then be shown the Task Scheduler screen. This is where you can monitor the progress of any Tasks that are running, so the screen is initially empty.

Select the blue Codex ring at the bottom of the screen to bring up the Main Menu (the blue Codex ring is available from any of the main screens of the user interface):



The Main Menu provides access to the following:

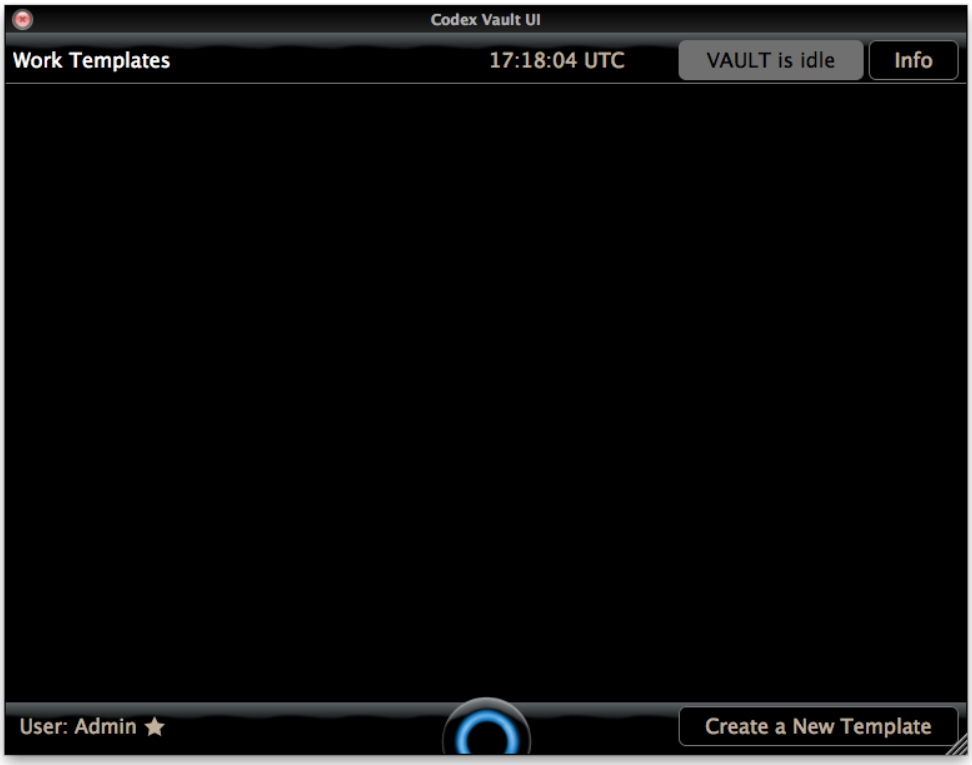
Task Scheduler – to monitor the status of Tasks
Library – to edit metadata, play a preview of loaded shots and sync audio
Storage – to view details of the loaded media
Work Package Templates – for setting up the project "Work Templates"
Settings – for creating/deleting user accounts and other system settings
Lock Vault – to prevent unauthorised people from using the Vault
Log Out – as above, but also to allow a different user to log in
Power Down Vault – to initiate the shutdown process. Alternatively, press the Power Button on the side of the Vault which will bring up the option to power down the system. The system cannot be powered down if there are active Tasks.

10. Work Templates

Select 'Work Package Templates'. This is where the Administrator can create and view the different Work Templates on the Vault system. The Work Templates define the workflow for the Vault on a project, and therefore setting up the Work Template(s) is an important responsibility of the Administrator.

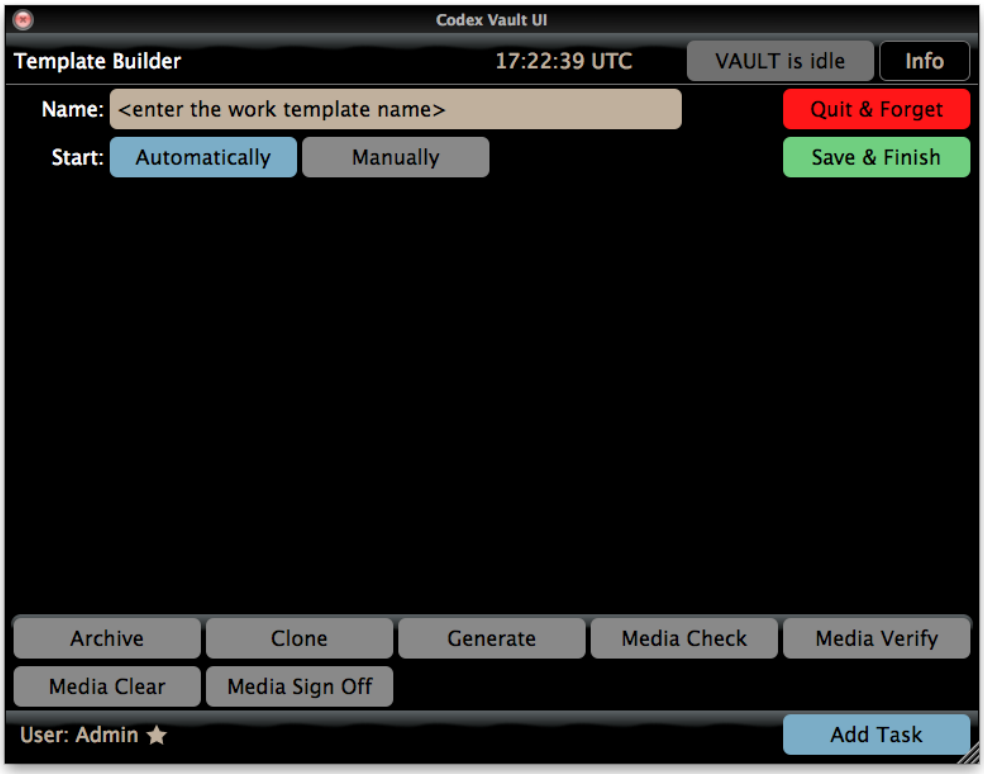
Note: if a User is not an Administrator they cannot edit the Work Templates.

The Work Templates screen will initially be empty:



10.1 Creating a Work Template

Select 'Create a New Template' and the Template Builder screen is shown:



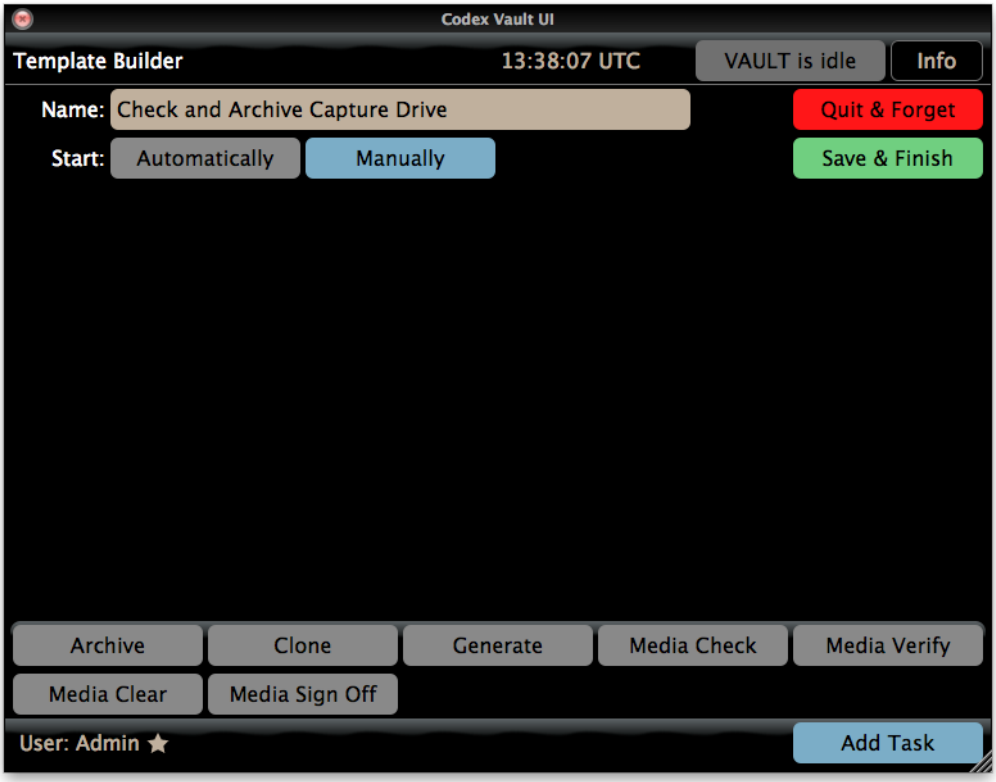
At the top of the screen you can edit the name of the Work Template, normally to something self explanatory, e.g. Check and Archive Capture Drive.

The Work Template can be set to start Automatically, Manually, or both. Simply highlight the setting in blue that is required.

When set to start Automatically the Work Template will begin when media is loaded in the specified port - this could be any port or a specific port depending on how the Work Template is set up. When set to start Manually the Work Template will be accessible from the Manual Jobs screen (available from the Task Scheduler screen).

10.2 Adding a Task to the Work Template

A range of possible tasks are shown at the bottom of the screen:

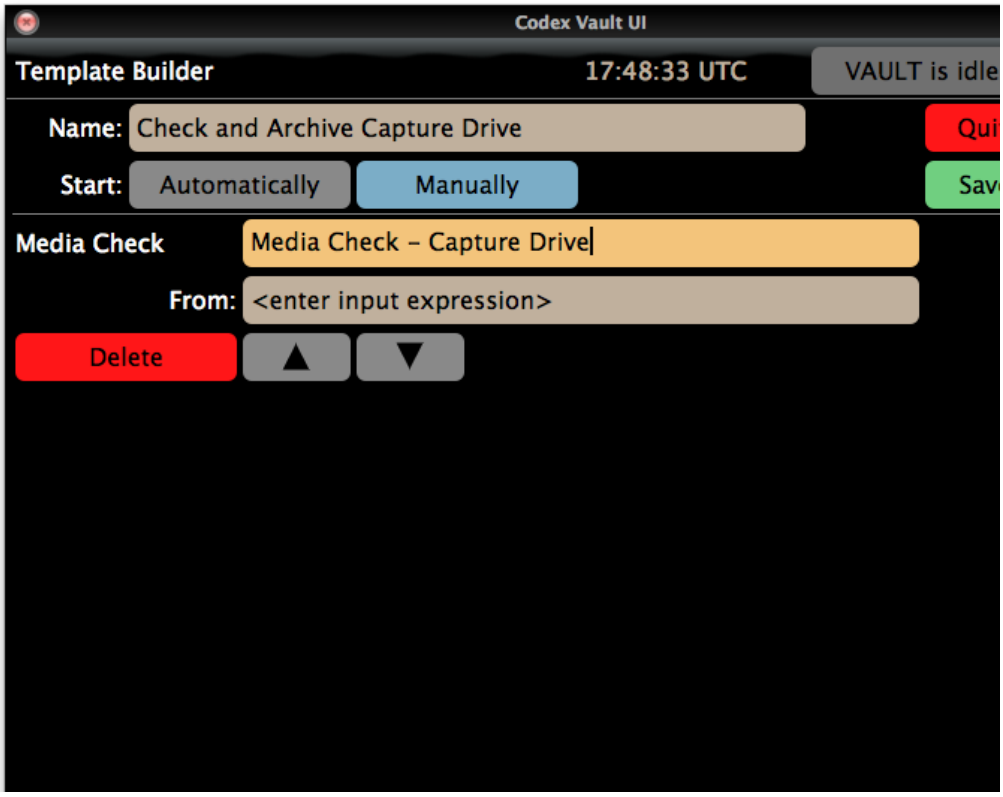


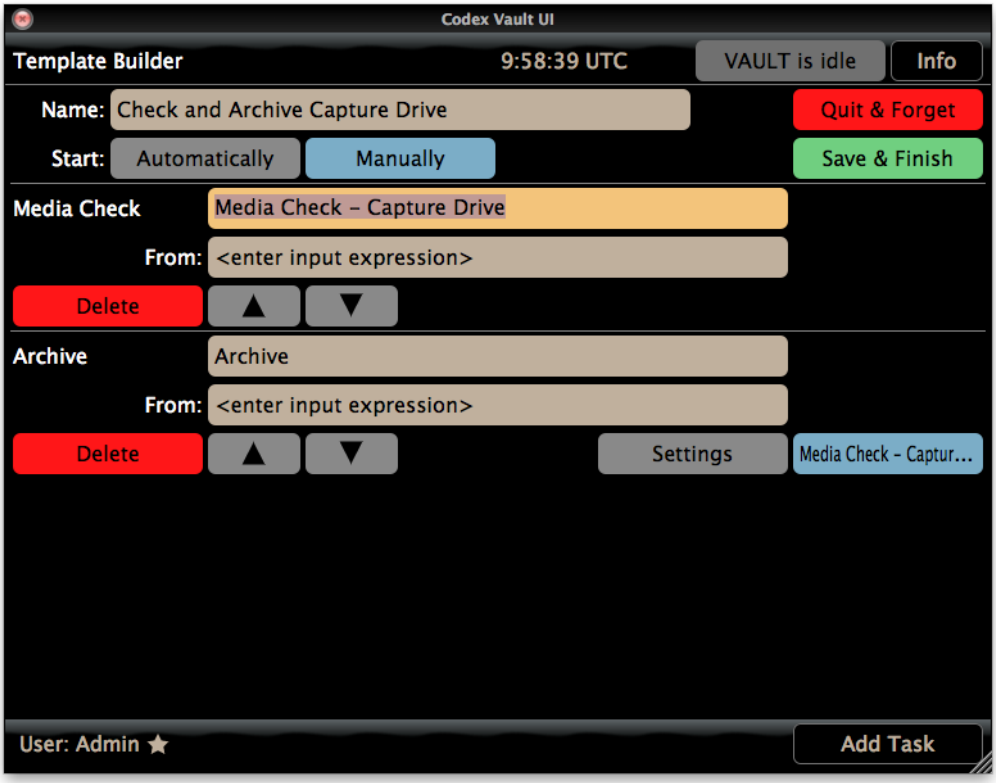
Click a task type to add it. After adding a task, click Add Task again to add further tasks to the Work Template.

The table below gives a brief description of these Tasks:

Task Name	Description
Archive	Copies data to LTO5 tape and then performs verification.
Clone	Makes an identical copy of data from one media to another.
Generate	Generates files for post-production to an external drive.
Media Check	Provides an overview on the contents of media and reports any issues found.
Media Verify	Performs a checksum-based verification of media.
Media Clear	Deletes the data from specified media.
Media Sign Off	Marks that all required tasks are completed with media so it can be cleared.

The next image shows the Template builder screen with Media Check and Archive Tasks that have been added:





For each Task you can specify a more descriptive name, e.g. 'Clone from Capture Drive to Internal'. By default each Task is simply called by its type, e.g. 'Clone', 'Archive', etc. If there is more than one of the same task type they must be given unique names.

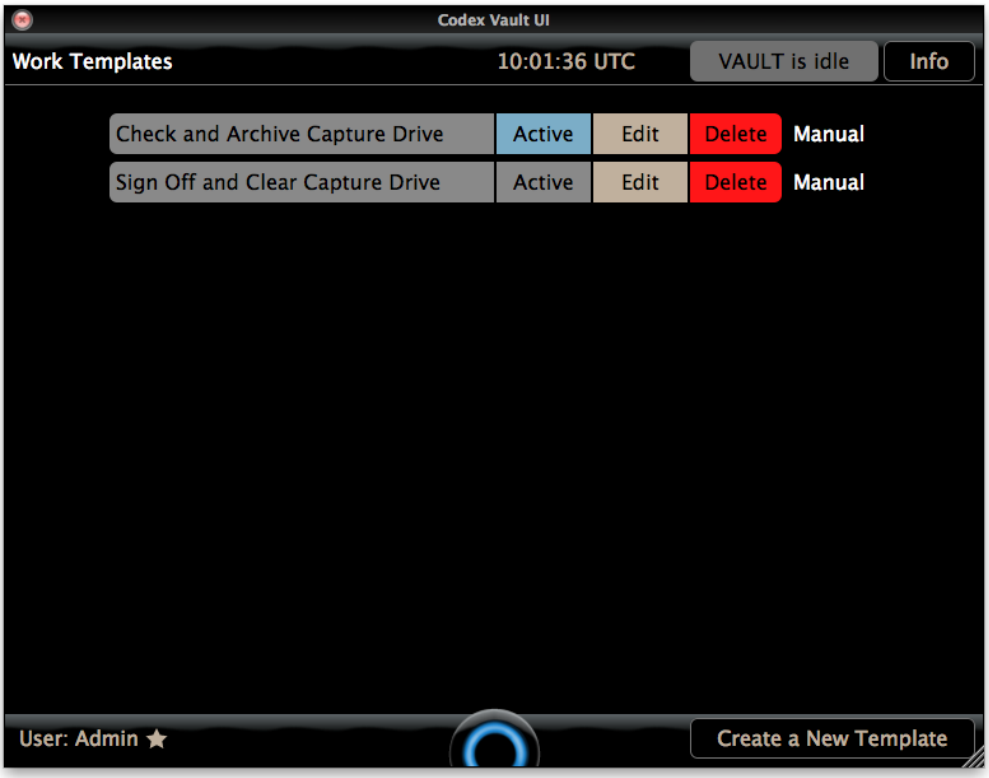
Any Task can be removed from the Template using the Delete button, and the order of the Tasks in the Template can be changed using

For all Tasks there is a 'From:' field in which you specify the media that is used as the input for the Task (where the data is coming from). Some Tasks also have a 'To:' field in which you specify the media that is used as the output for the Task (where the data is going to). Setting up the expressions for the 'From:' and 'To:' fields is described in the section 'From and To Expressions'.

Some Tasks have an option to 'Eject Output'. This means that when the Task has completed the media used as the output for the Task will be ejected from the Vault and it can be safely removed.

For most Tasks there are 'Settings' that can be chosen. Full options for each task type will be described later in this guide.

Once you have finished defining a Work Template select Save & Finish. (If you don't want to save the Work Template, select Quit & Forget.) It will be added to the list of Work Templates on the system:



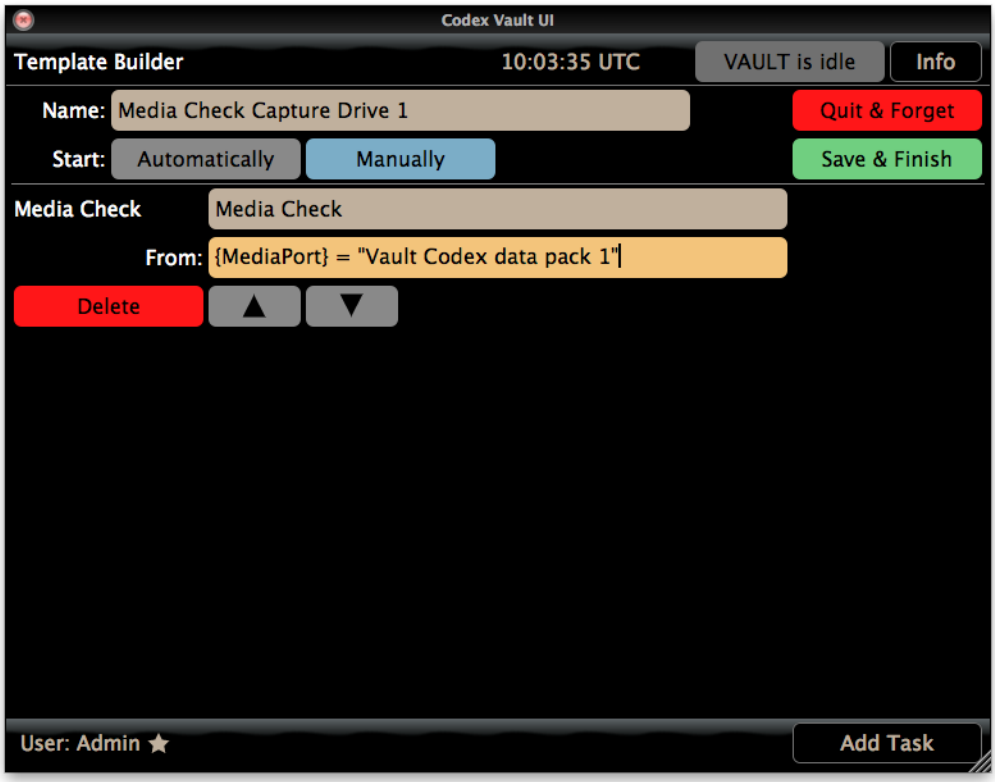
From this screen you can select if a Work Template is Active. If a Work Template is set to start Automatically then it will only be able to start when it is Active. If a Work Template is set to start Manually then it will only be shown on the Manual Jobs screen when it is Active.

You can also choose to Edit or Delete any Work Template from this screen.

11. From and To Expressions

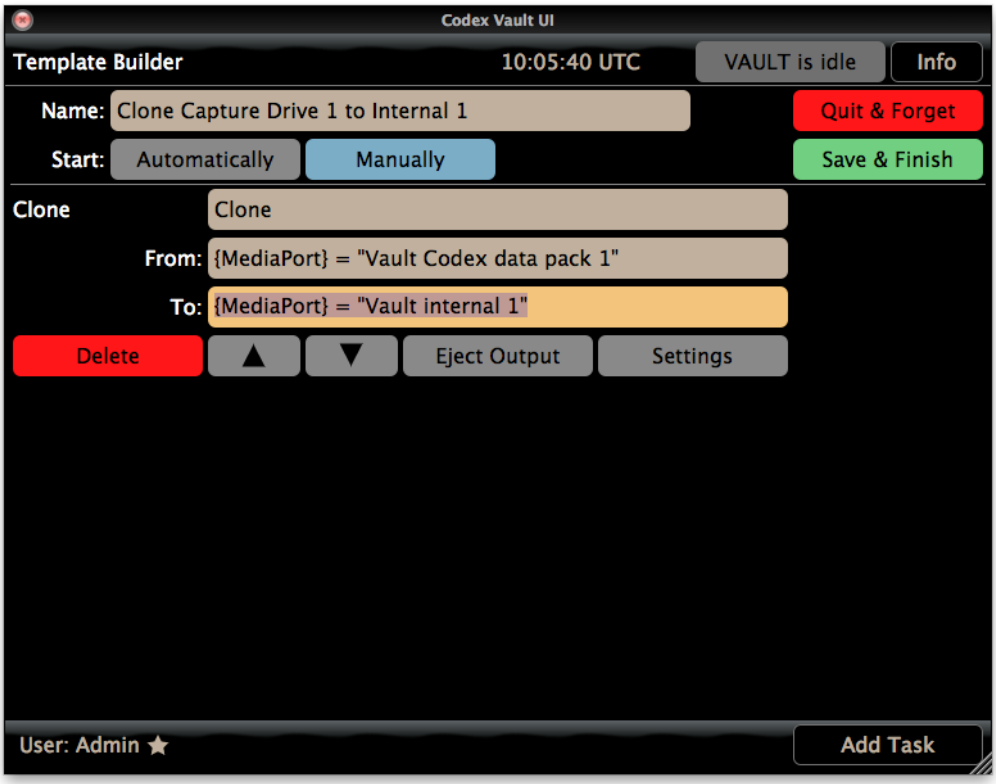
In the 'From:' and 'To:' fields for a Task we can specify expressions, which are used to define where the source and destination media are loaded.

We will start by looking at an example of an expression that could be used in the 'From:' field for a Media Check Task:



All Tasks require a ‘‘From:’ expression that specifies the {MediaPort} - physical location of the media - for the Task. So in this case the Media Check will run on the media that is loaded in the CODEX 1 port.

In addition to an input expression the Media Clone Task also requires an output expression in the ‘To:’ field, as shown here:



This Task will clone material from the media loaded in the CODEX 1 port to the Internal 1 (Storage Module).

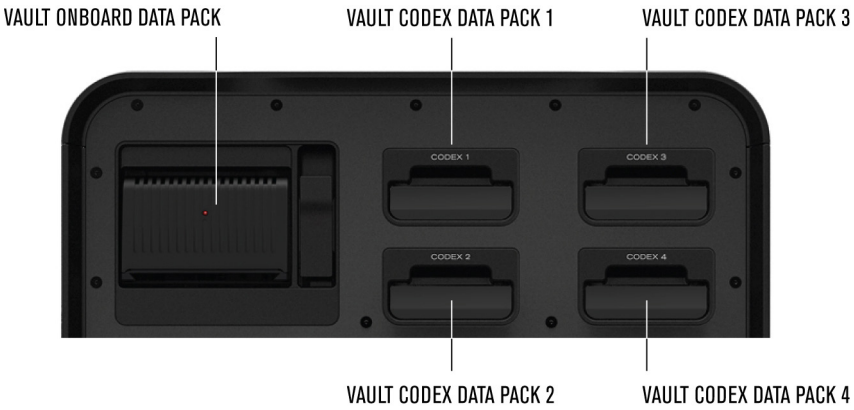
11.1 Full options for From and To Expressions

The options for these expressions are:

MediaPort

{MediaPort} can be:
Vault Onboard data pack
Vault Codex data pack 1
Vault Codex data pack 2
Vault Codex data pack 3
Vault Codex data pack 4
Vault internal 1
Vault internal 2

This diagram shows how the MediaPort names correlate to the physical ports on the Vault:



MediaEmpty

{MediaEmpty} can be:
[0|1]
This is used with the output expression to only copy to empty media. A value of 1 means the destination is required to be empty before copying.

PreviousTaskMULList

{PreviousTaskMULList} can be used when there are several tasks grouped together in a Work Template. A task will process a group of shots and the use of {PreviousTaskMULList} in the From expression for the next task means this will also process the same shots. Use of {PreviousTaskMULList} in expressions is detailed in the next section.

InitialTaskMULList

{InitialTaskMULList} can be used when there are several tasks grouped together in a Work Template. The first task will process a group of shots and the use of {InitialTaskMULList} in the From expression for any subsequent tasks means they will also process the same shots.

PreviousTaskInputMUL

{PreviousTaskInputMUL} can be used when there are several tasks grouped together in a Work Template. A task will process a given media and the use of {PreviousTaskInputMUL} in the From expression for the next task means this will use that same physical media. Use of {PreviousTaskInputMUL} in expressions is detailed in the next section.

PreviousTaskOutputMUL

{PreviousTaskOutputMUL} can be used when there are several tasks grouped together in a Work Template. A task will utilize a specified media to output to and the use of {PreviousTaskOutputMUL} in the From expression for the next task means this will use that same physical media. Use of {PreviousTaskOuputMUL} in expressions is detailed in the next section.

11.2 Syntax for From and To Expressions

When specifying the From or To expression it must be written with the correct syntax. If spelling, case, or spacing is incorrect then it will not work. The software will not warn you if the syntax of the expression is wrong.

Here are some basic rules:

1. You must at minimum specify {MediaPort} followed by an equals symbol (=) and the name of the port in “quotes”. Examples are:

{MediaPort} = “Vault Onboard data pack”
{MediaPort} = “Vault Codex data pack 1”
2. There are no spaces between the words in {MediaPort}, and the M and P must be capitalized with other letters lower case. For example, entering {Media port} will not work.

3. When specifying the name of the {MediaPort} there are spaces between the words. For example, “Vault Onboard data pack” is correct, whilst “VaultOnboarddatapack” is not correct.

4. The asterisk * symbol can be used to mean ‘anything’. For example:

{MediaPort} = “*”

This can be useful if, for example, you want to set up a Work Template to run automatically when media is loaded in any port and the user will then be asked to choose the port. Or you could be more specific:

{MediaPort} = “Vault Codex *”

This could be used to run a task on media loaded into any of the Capture Drive ports.

Here are some more advanced rules:

5. After specifying the {Mediaport} name you can combine other parameters with the following operators: and, or, not. For example:

{MediaPort} = “Vault Codex *” and {MediaEmpty} = “1”

6. You can use (brackets) in the expression too. For example:

({MediaPort} = “Vault Onboard data pack” or {MediaPort} = “Vault Codex data pack 1”) and {MediaEmpty} = “1”

This could be used, for example, to run a Media Clone on an Onboard Datapack or Capture Drive in port 1, only if it was empty.

7. The {MULList} option operates a bit differently. In order for a task to process the same group of shots as the previous task, use {PreviousTaskMULList} in a syntax like this:

{MediaPort} = “Vault internal 1” and {MULList} = {PreviousTaskMULList}

8. In order for a task to process the same group of shots as the intial task, use {InitialTaskMULList} in a syntax like this:

{MediaPort} = “Vault internal 1” and {MULList} = {InitialTaskMULList}

9. In order to process the same MUL (physical media) as was used in the previous task, in the input expression for a task use either:

{MUL} = {PreviousTaskInputMUL}

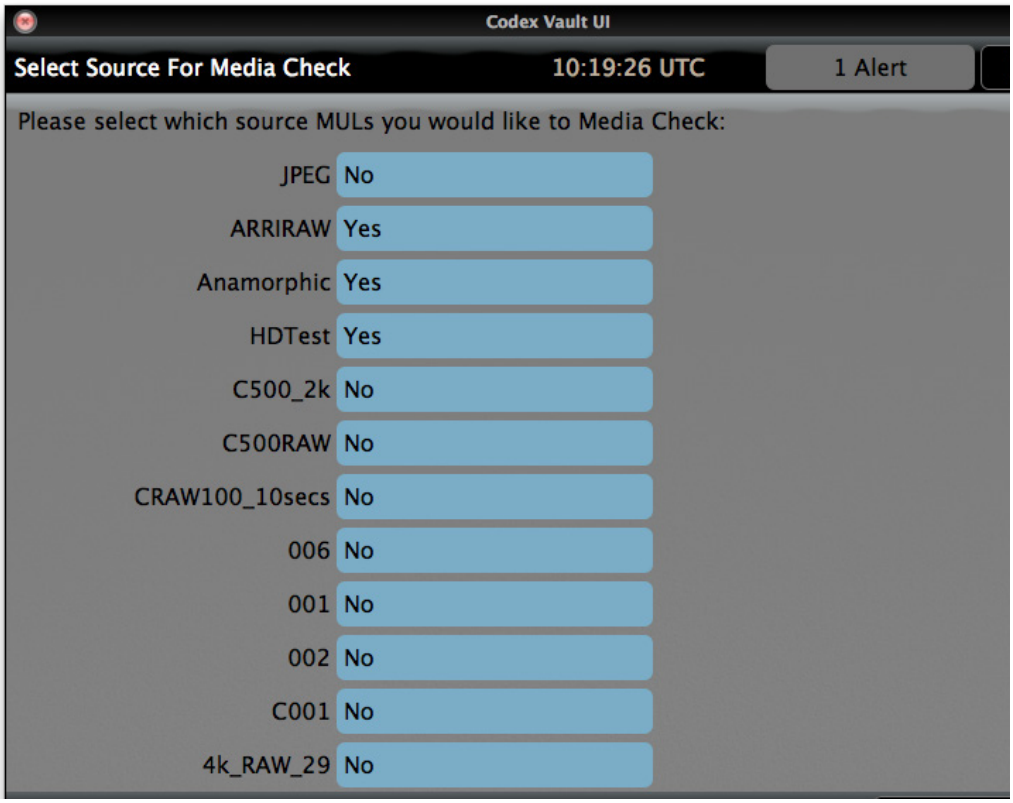
Or, alternatively:

{MUL} = {PreviousTaskOutputMUL}

12. Task Types

12.1 Selecting a MUL for a Task

As a general note for all tasks, if the source media contains more than one group of shots (MUL), the User is given the option to select which groups/MULs are involved in the task. When this is the case a list of available MULs are shown but none are initially selected. The User must manually set which MULs will be involved in the task:



An example is where the Vault internal storage is used as the source media for a task. The internal storage is normally used as a destination for cloning data to, and after several Datapacks/Capture Drives have been cloned to the Vault internal storage it will contain shots from several MULs.

Then, for example, if an Archive task is run using the Vault internal storage as the source the User can select which MULs to include in the Archive.

The Tasks will now be discussed in more detail. They are presented on the Vault screen in alphabetical order, but they will be discussed in the order they are more likely to be used.

12.2 Media Check Task

The Media Check Task is usually specified as the first Task in a Job. It provides the following features:

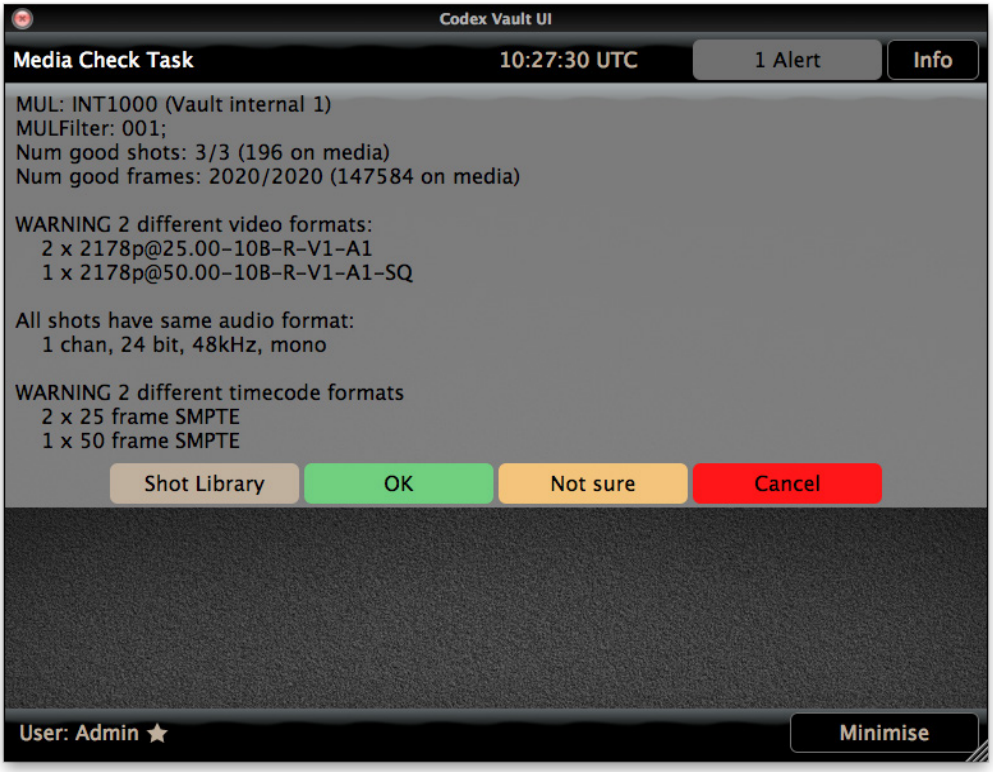
- Reports the number of shots and frames on the media.
- Provides a summary of the video/audio/timecode formats on the media.
- Checks for duplicate timecodes.
- Checks for duplicate shot names.
- Reports any issues found during these checks.

In the example shown below, the video format information displayed means:

Format attribute	Description
2178p	Image height and scan format.
25.00	Frames per second.
10B	Image sample bit depth, e.g. 10-bit.
R	Colourspace, i.e. RGB Bayer. The other possibility is Y meaning YCbCr.
V1	Number of video channels.
A2	Number of audio channels.

If the media being checked contains shots from multiple Rolls the user will be asked to select which of these Rolls to include in the media check.

Here is an example of the results from a Media Check task:



This shows a Media Check where no issues have been found.

The User could optionally press to view the Shot Library (as described in the later section), where they can check metadata, view on screen playback, and sync audio.

They can then proceed by selecting from the given options:

OK – this should be selected if the user agrees with the results of the Media Check. The Vault then proceeds with any subsequent tasks that have been configured.
Not Sure – this should be selected if the user is not sure that the results of the Media Check match their expectations. The Vault then proceeds with subsequent tasks, but any PDF reports produced later will show that the user did not mark the Media Check as 'OK'.
Cancel – this should be selected if the user does not agree with the results of the Media Check. The Vault will not proceed with subsequent tasks in that Work Template.

12.2.1 Media Check Information

The Media Check always provides the following information:

MUL: - this is the Media User Label for the media that is being checked (followed by the media location in brackets)
MULFilter: - if a selection of shots are included based on their MUL, this is shown here
Num good shots: - shows how many shots from the total have no issues detected
Num good frames: - show how many frames from the total have no issues detected

Depending on what is found during the Media Check some of the following information may also be displayed.

These messages are for information and no action is required:

All shots have same video format
All shots have same audio format
All shots have same timecode format
No audio

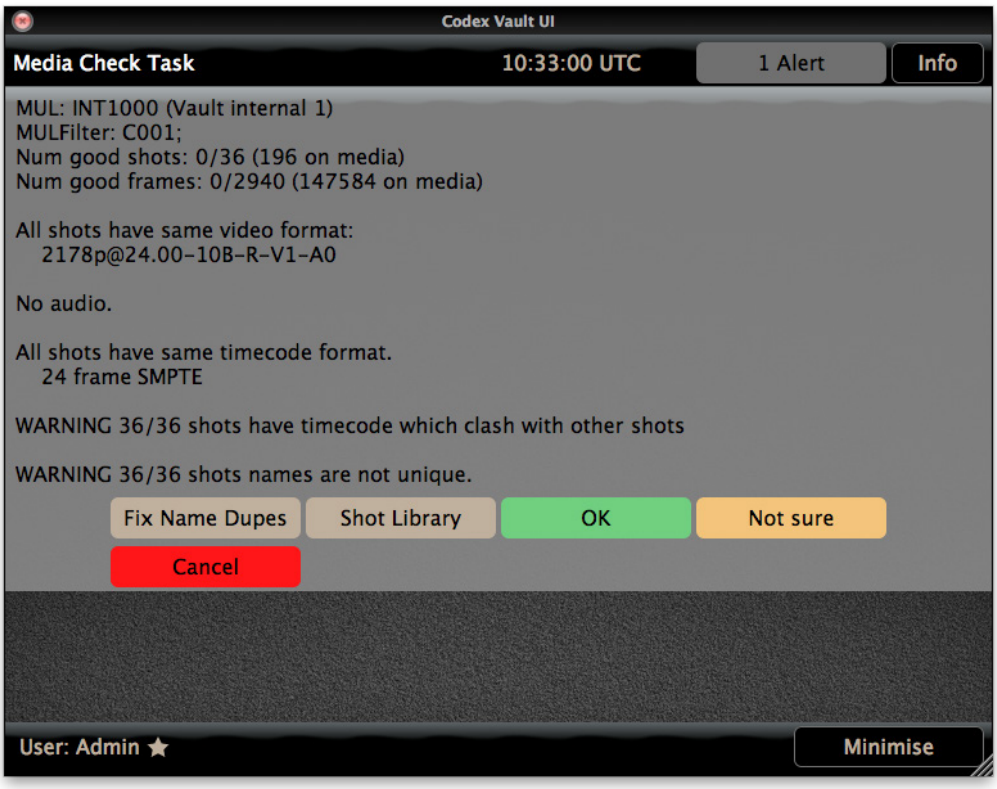
These messages may or may not be expected depending on the project:

WARNING X different video formats
WARNING X different audio formats
WARNING X different timecode formats

These messages provide warnings that are important to prevent issues in post-production:

WARNING X/Y shots have timecodes which clash with other shots
WARNING X/Y shots have timecode clashes if normalised to 24fps SMPTE
WARNING X/Y shots have timecode breaks/repeats
WARNING X/Y shots names are not unique

The image below shows a Media Check where issues have been found:



If there is more than one shot with the same name, there will be a Fix Name Dupes button shown. Pressing this will add a number in brackets to the end of any duplicate shot names. For example:

Original Shot Names	Shot Names After “Fix Name Dupes”
1-1_A001	1-1_A001
1-1_A001	1-1_A001(2)
1-1_A001	1-1_A001(3)

12.3 Clone Task

The Clone Task makes an identical copy of data from one media to another, e.g. from a Capture Drive to a Transfer Drive.
This includes all data – image, audio, and metadata.

There is an Eject Output option for a Clone Task – if this is highlighted then the target media will be automatically ejected from the system once the Clone task has finished.

In the Settings for a Clone Task you can set Create CRC32 samples: to Disable or Enable. When set to Enable during a Clone Task the system will read the source data and create CRC32 samples that are compared to the copy, ensuring data integrity.

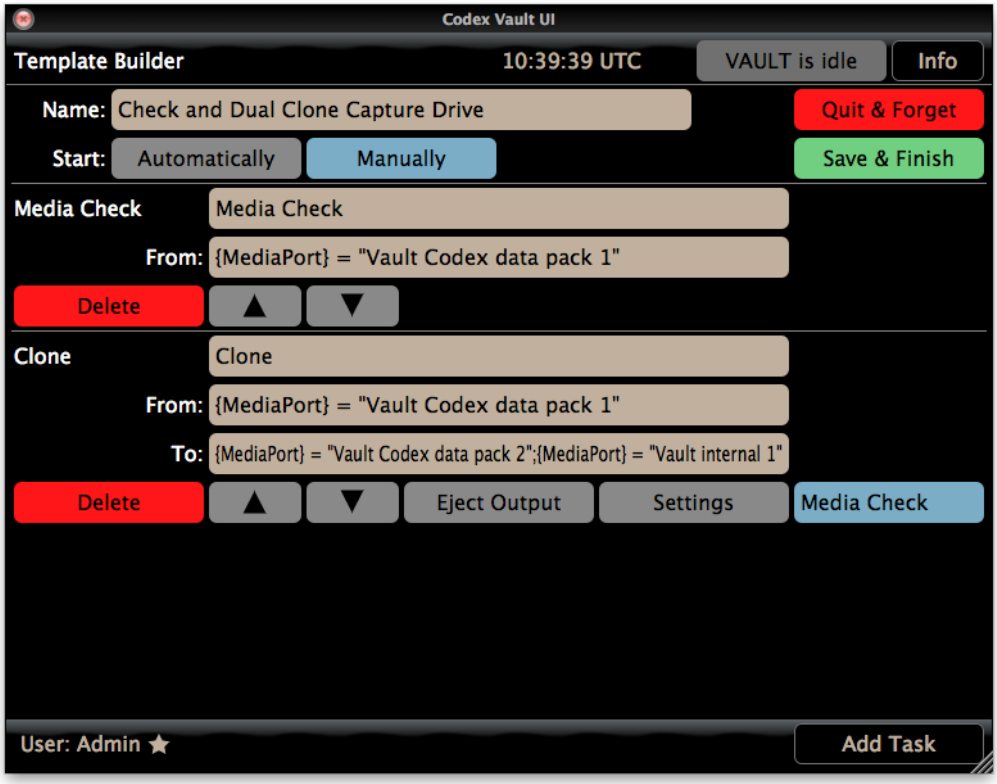
If the source data already has CRC32 samples then the system will compare these to the copied data also.

12.3.1 Dual Clone

The Clone Task can be used to clone data to two targets at the same time. This is achieved by including details of each target in the To: expression for the task separated by a semi-colon (;) symbol. For example:

{MediaPort} = “Vault Codex data pack 1”;{MediaPort} = “Vault Codex data pack 2”

Setting this up as a Work Template is shown below:



12.4 Archive Task

The Archive Task performs a Backup (and Verify) operation of data to tape using the LTO5 drives in the Vault. The tapes are formatted as LTFS (Linear Tape File System), which is an open standard.

By default the system will do either a dual tape archive. This can be changed to a single tape archive by editing a system configuration file. For more information on changing this system configuration contact Codex support.

After adding an Archive Task to the Template, select Settings. The Target should be LTFS and the Operation can be Backup, Backup And Verify, or Verify.

The Backup And Verify option copies the files and then does a byte-for-byte verification by comparing what is on the tape to the original data. This is the recommended setting.

If Backup is used then the Verify option can be used later, and this compares what is on the tape with md5 checksum files that were created from the original data. These md5 files are stored on the Vault – therefore the Verify must be done on that machine.

Set the Frame Rate to be correct for the project. This is very important to allow successful conforming from the LTFS tapes later in post-production.

The file types and directory structure for the Archive Task are pre-determined, as follows:

File Type	Description
ari	Per frame files for ARRIRAW material, containing extensive metadata
dpx	Per frame files for all other material, containing essential metadata. These are 10-bit RGB dpx files.
bwf	Per shot Broadcast WAV audio files, containing timecode and roll metadata.
xml	Per shot metadata files, containing all metadata (with the exception of per frame metadata)
rmf	Per frame files for Canon Cinema RAW material, containing extensive metadata

Directory Structures In Archive:

ari - <Roll>/<Extension>/<Roll>.<Shot>.<UniqueID>/<Shot>.<TC Frames>.<Extension>

dpx - <Roll>/<Extension>/<Roll>.<Shot>.<UniqueID>/<Shot>.<TC Frames>.<Extension>

bwf - <Roll>/<Extension>/<Roll>.<Shot>.<UniqueID>/<Shot>.<Channel>.<Extension>

xml - <Roll>/<Extension>/<Roll>.<Shot>.<UniqueID>/<Shot>.<Extension>

rmf - <Roll>/<Shot>/<Shot>_<Frame Number>.<Extension>

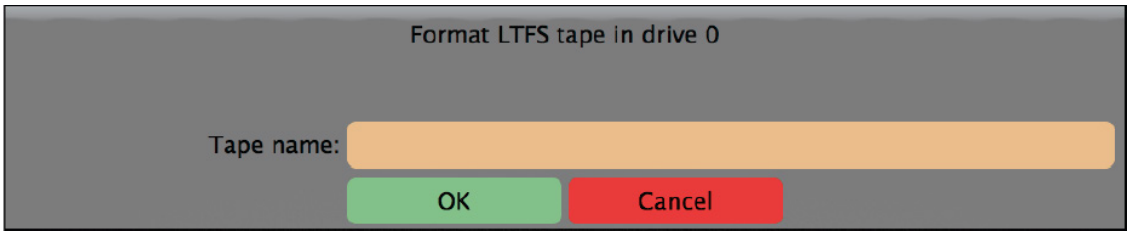
bwf - <Roll>/<Shot>/<Shot>_00000001.<Extension>

Note: the .rmf and second .bwf structure will only be used for Canon Cinema RAW recordings. The structure allows these files to be loaded into third party software such as Canon Cinema RAW Development.

When an Archive Task starts the tapes have to be formatted if they are new, which takes a couple of minutes. In this case the following prompt will appear:

Tape not formatted
There is a tape in drive 0 but it is not formatted or unreadable. Do you wish to format it and continue with offload?
Yes
No

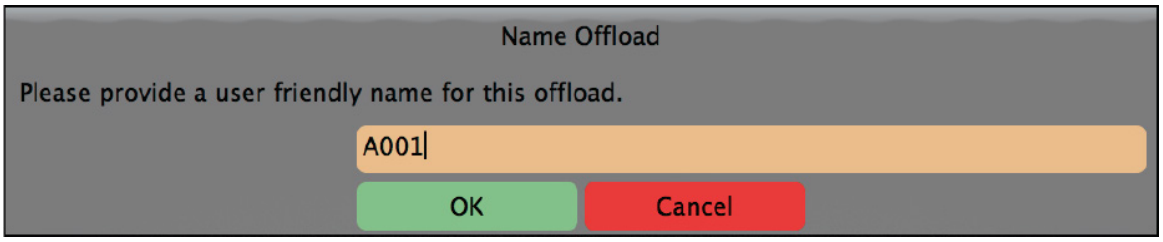
During the formatting process the system will prompt for a tape name:



Typically this would match the barcode label. There should be no spaces in tape names.

When the Archive process starts a message will be displayed that says 'Status: Applying shot filter…' – this may be shown for several minutes whilst the system prepares to run the archive.

The tapes will then be mounted, which may take a minute or two. Then a prompt will appear asking for a user-friendly name for the offload for logging purposes:



Typically this would match the Roll metadata for the material that is being written to tape, but anything can be entered.

12.5 Generate Task

The Generate Task can be used to output a range of file types to external disk to be used for post-production.

When preparing the Generate Task, select Settings to define the File type and any other options for it. Each Generate Task is configured for a single file type, but you can set up multiple Generate Tasks to run in a sequence as part of your Work Template.

12.5.1 Settings for different file types

The table below shows the different image/audio file types and options available for them:

Option ↓ - File Type →	dpx	bmp	jpg	ari	rmf	avi	mov	mxf	3D DNxHD mxf
Audio file type	For still image files this setting determines if associated audio is also generated. 'wav' files contain only audio - 'BWF' files also contain timecode and roll metadata.								
None	✔	✔	✔	✔	✔	✔	✔	✔	✔
wav	✔	✔	✔	✔	✔	✔	✔	✔	✔
BWF	✔	✔	✔	✔	✔	✔	✔	✔	✔
Directory	Set the directory that the files will be exported to here. This is typically to an external drive connected to the Vault. Leave this blank to choose from mounted volumes when the Generate task begins.								
First frame	Leave this field blank to generate files for entire shots. If required a value can be entered here to start generating files from a specified frame number in the shots.								
<User Input Value>	✔	✔	✔	✔	✔	✔	✔	✔	✔
Num frames	Leave this field blank to generate files for entire shots. If required a value can be entered here to only generate files for a specified number of frames in the shots.								
<User Input Value>	✔	✔	✔	✔	✔	✔	✔	✔	✔
Lut	Specify the Lut(s) to apply to files here. The software supports a range of LUT file formats, detailed in the 'LUTs Guide'.								
<User Specified Lut>	✔	✔	✔	✘	✘	✔	✔	✔	✔
Scaling	Images can be scaled for some file types if required. Scaling can be done either to a factor of the original image size, or to a specified width and height.								
None	✔	✔	✔	✘	✘	✔	✔	✘	✘
Scaling factor specified	✔	✔	✔	✘	✘	✔	✔	✘	✘
Fixed size specified	✔	✔	✔	✘	✘	✔	✔	✘	✘
Scale factor	Choose the required Scale Factor here.								
1/2	✔	✔	✔	✘	✘	✔	✔	✘	✘
1/4	✔	✔	✔	✘	✘	✔	✔	✘	✘
1/8	✔	✔	✔	✘	✘	✔	✔	✘	✘
1/16	✔	✔	✔	✘	✘	✔	✔	✘	✘
Scale width	Specify the required image Width here.								
<User Input Value>	✔	✔	✔	✘	✘	✔	✔	✘	✘
Scale height	Specify the required image Height here.								
<User Input Value>	✔	✔	✔	✘	✘	✔	✔	✘	✘
FPS	This should generally be set to the project rate. (Otherwise files will be generated at the Natural [shooting] frame rate, which may vary, causing issues in post production).								
23.98	✔	✘	✘	✔	✔	✔	✔	✔	✔
24.00	✔	✘	✘	✔	✔	✔	✔	✔	✔
25.00	✔	✘	✘	✔	✔	✔	✔	✔	✔
29.97	✔	✘	✘	✔	✔	✔	✔	✔	✔
30.00	✔	✘	✘	✔	✔	✔	✔	✔	✔
47.95	✔	✘	✘	✔	✔	✔	✔	✔	✔
48.00	✔	✘	✘	✔	✔	✔	✔	✔	✔
50.00	✔	✘	✘	✔	✔	✔	✔	✔	✔
59.94	✔	✘	✘	✔	✔	✔	✔	✘	✔
60.00	✔	✘	✘	✔	✔	✔	✔	✘	✔
Natural	✔	✘	✘	✔	✔	✔	✔	✔	✔
Interlace	This option can be used to create Interlaced mxf files.								
No	✘	✘	✘	✘	✘	✘	✘	✔	✔
Yes	✘	✘	✘	✘	✘	✘	✘	✔	✔
Burn-in	Specify the Burn-in to apply to files here. There are preset Burn-ins for Masking, Timecode, Shot/Roll etc. Users can also refer to the 'Burn-Ins Guide' to create custom burn-ins.								
<User Specified Burn-In>	✔	✔	✔	✘	✘	✔	✔	✔	✔
Roll transform	This option can be used for multi-channel shots (Stereo rig, or A/B cameras, to a Codex recorder), so that files for each camera have unique Roll metadata in the file header.								
Append Channel ID	✔	✔	✔	✔	✔	✔	✔	✔	✔
Prepend Channel ID	✔	✔	✔	✔	✔	✔	✔	✔	✔
Compression	Select the compression codec used for editorial/dailies files here. See the section 'Compression Quality settings' for details.								
DNxHD 422	✘	✘	✘	✘	✘	✘	✔	✔	✔
DNxHD 444	✘	✘	✘	✘	✘	✘	✔	✔	✔
ProRes 422	✘	✘	✘	✘	✘	✘	✔	✘	✘
ProRes 4444	✘	✘	✘	✘	✘	✘	✔	✘	✘
jpeg	✘	✘	✔	✘	✘	✔	✔	✔	✘
Compression Quality	This setting relates to the selected Compression option. See the section 'Compression Quality settings' for details.								
High	✘	✘	✔	✘	✘	✔	✔	✔	✔
Medium	✘	✘	✔	✘	✘	✔	✔	✔	✔
Low	✘	✘	✔	✘	✘	✔	✔	✔	✔
Conversion Quality	This option determines the quality of: De-Bayering, Colourspace conversion, and Scaling operations. High will give the best results, but take longer than Medium or Low.								
High	✔	✔	✔	✘	✘	✔	✔	✔	✔
Medium	✔	✔	✔	✘	✘	✔	✔	✔	✔
Low	✔	✔	✔	✘	✘	✔	✔	✔	✔
Audio	For editorial/dailies files this determines the embedded audio. For image sequences this setting determines whether 'wav' or 'BWF' files are generated as Mono or Stereo.								
Mono	✔	✔	✔	✔	✔	✔	✔	✔	✔
Stereo	✔	✔	✔	✔	✔	✔	✔	✔	✔
DPX	This option determines the format of dpx files that are generated.								
Keep Existing Format	✔	✘	✘	✘	✘	✘	✘	✘	✘
Convert to 10-bit RGB	✔	✘	✘	✘	✘	✘	✘	✘	✘
Uncompress	✔	✘	✘	✘	✘	✘	✘	✘	✘
Convert to 12-bit RGB	✔	✘	✘	✘	✘	✘	✘	✘	✘
Convert to 16-bit RGB	✔	✘	✘	✘	✘	✘	✘	✘	✘

12.5.2 Setting the destination for a Generate Task

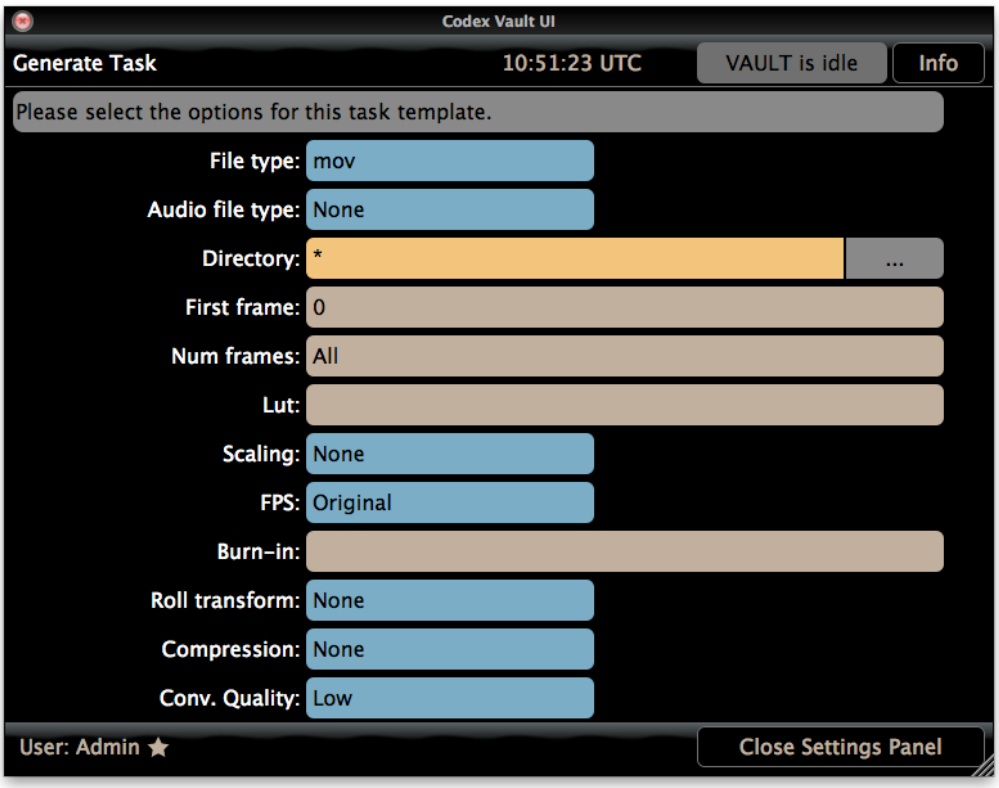
The Vault will auto-mount external drives that are formatted with the following filesystems:

- FAT
- Ext3
- HFS
- HFS+
- NTFS
- XFS

Drives can be connected to the following ports on the Vault:

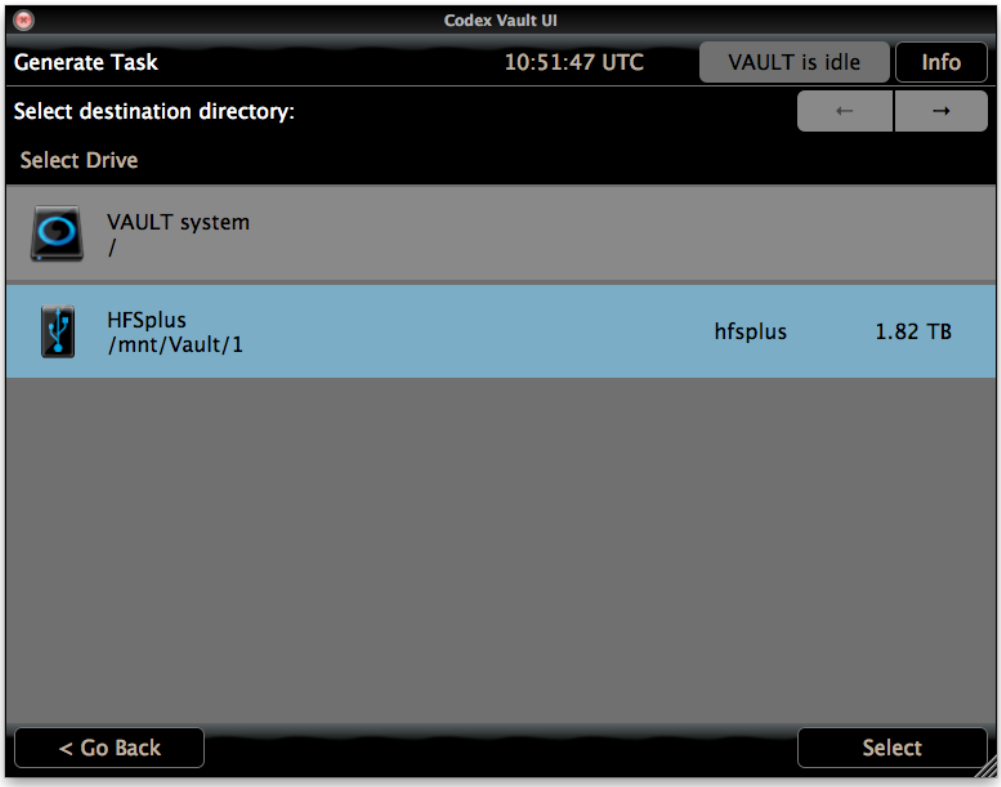
- SAS (a cable is available to connect up to 4 eSATA devices to the SAS port)
- USB 2.0
- 2.5" SSD
- 1.8" SSD

In the settings for the Generate Task specify an * in the Directory field if you want to write files to an external drive:



Use of the * symbol means when the Generate Task runs the User will be asked to select from a list of external drives that are connected.

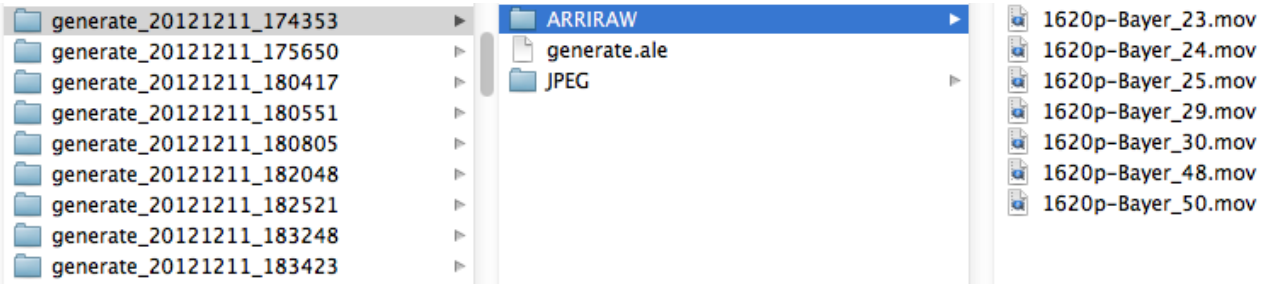
If the mounted device/directory is always the same then the exact path can be specified in the Directory field when setting up the Generate Task. Click the ... symbol to choose a directory:



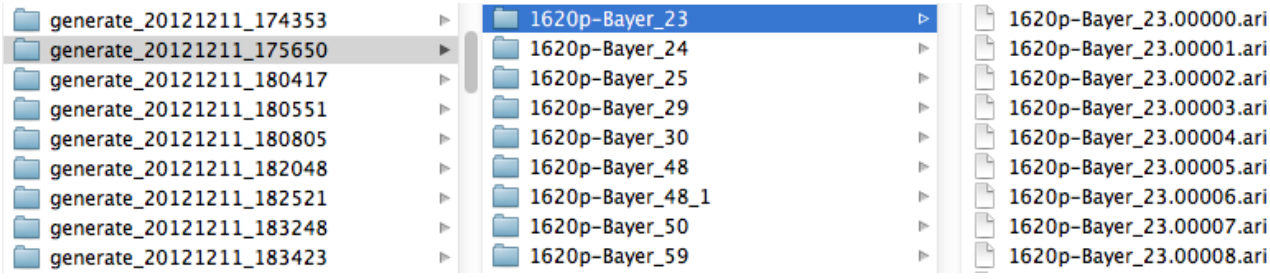
A top level directory will always be created on the drive used for the Generate Task, which is given a unique name based on the date and time the task was started in the following format:

generate_DDMMYY_HHMMSS

Per shot files such as .mxf or .mov will be copied into a Roll folder within the main generate folder:



For per frame files such as .ari or .dpx, the generate folder will contain a folder for each shot, and the individial files will be in these folders.



Each Generate Task automatically creates an ALE (Avid Log Exchange) file called generate.ale in the main generate folder. The ALE can be used to bring all the original shot metadata into Avid.

12.5.3 Compression Quality Settings

When using ProRes 422 or DNxHD compression there is a Compression Quality setting available. Below are details on how this setting relates to the compression codec that is used.

ProRes 422:

Compression Quality	ProRes codec
High	ProRes 422 HQ
Medium	ProRes 422 LT
Low	ProRes 422 Proxy

DNxHD 422:

Compression Quality	Frames per second	DNxHD 422 codec
High*	23.98/24	DNx175/DNx175x
	25	DNx185/DNx185x
	29.97/30	DNx220/DNx220x
Medium	23.98/24	DNx115
	25	DNx120
	29.97/30	DNx145
Low		DNx36

* Using High Compression Quality the DNx codec will be 8-bit for source material that is captured as 8-bit.The DNx codec will be 10-bit for source material that is captured as 10-bit or higher. Medium and Low Quality will use an 8-bit DNx codec.

DNxHD 444:

Frames per second	DNxHD 444 codec
23.98/24	DNx360x
25	DNx370x
29.97/30	DNx440x

When mxf files are generated, for any shots with audio there will be a video mxf as well as audio mxf files. For example, if shot 1-1_A001 has two audio channels then generating an mxf will result in three files:

1-1_A001V1.mxf
1-1_A001A1.mxf
1-1_A001A2.mxf

These video and audio mxf files contain metadata so that when they are loaded into an Avid edit system they will be linked automatically.

As well as image/audio files the Vault can also generate some metadata file types:

CodexShot xml – these files are generated per-shot and contain a wide range of metadata that can be used in post-production with custom tools.

FinalCut xml – this file is designed to allow easy organisation of mov files in FCP. There is one file generated for all shots that can be loaded into FCP along with the media, and the software then automatically creates bins for the media.

ASC CDL xml – these files are generated per-shot for any shots with CDL Data (captured from Truelight TL Onset software). They can be used later in post-production software to apply the same LUT that was used on set.

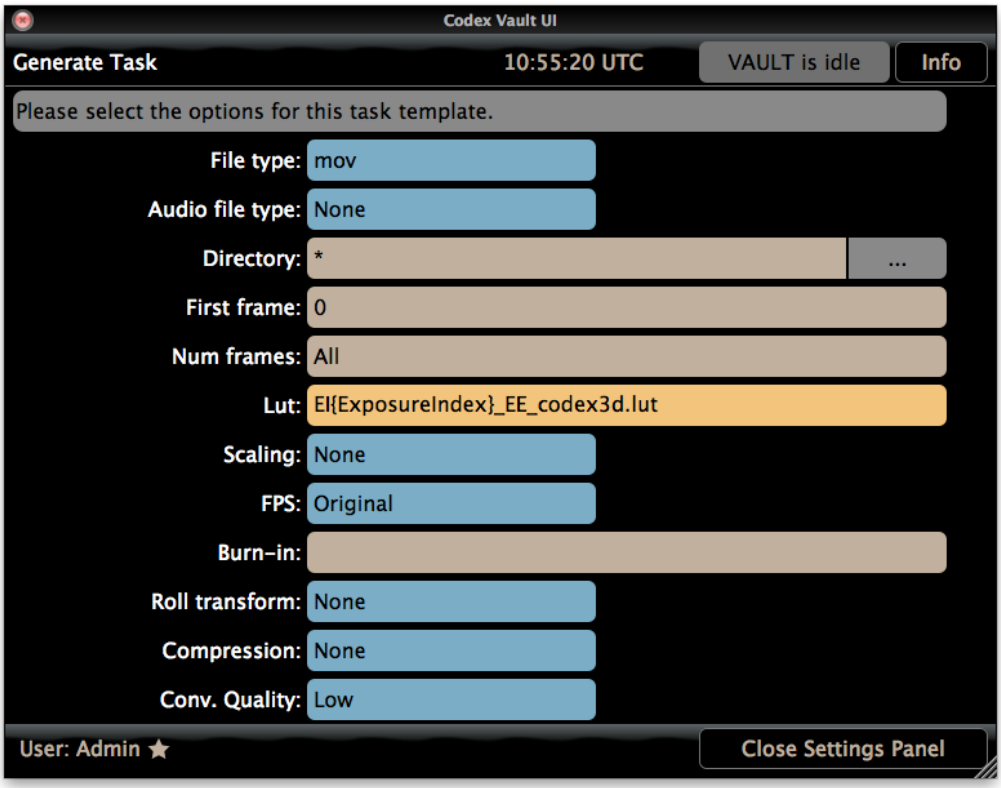
Metadata txt – this file is for proprietary metadata and should not be used under normal circumstances

12.5.4 Applying LUTs and Burn-Ins

The Vault can apply 1D LUTs, 3D LUTs, and burn-ins to deliverable files. The most common use of this feature is for editorial and dailies files to have a colour corrected image, optionally with production information and a watermark.

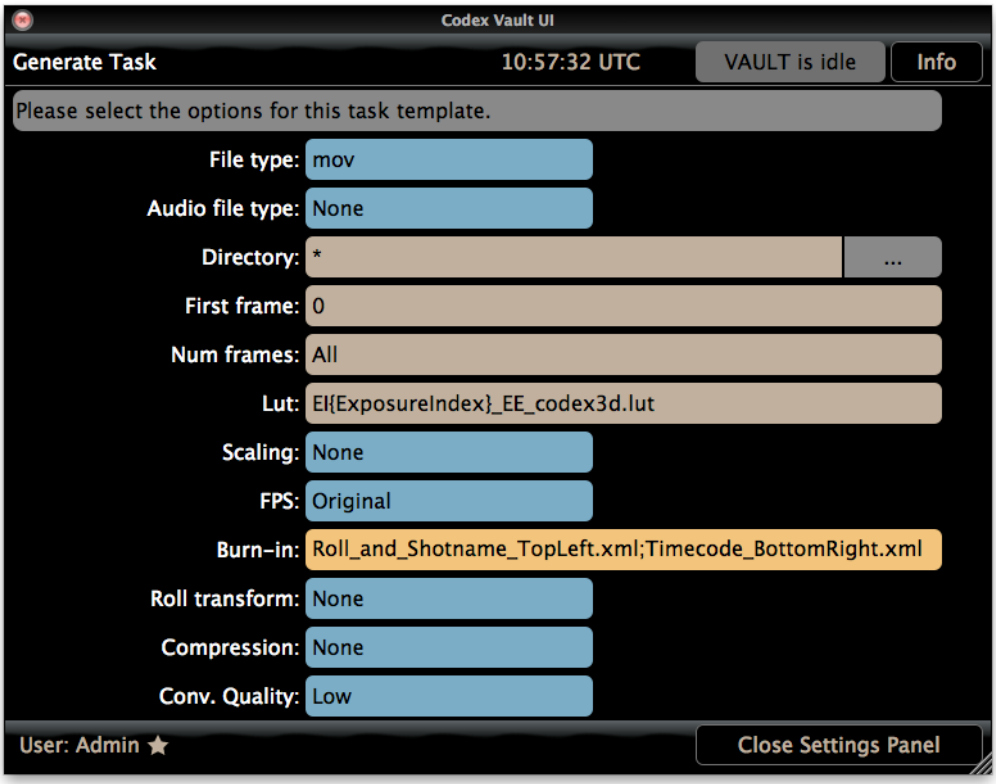
When in the Settings for a Generate Task there are separate boxes to specify LUT and Burn-In files. There are a range of pre-loaded LUT and Burn-In files available to choose from on the Vault:

LUT Name	Description
C3vid_F.lut C3vid_L.lut	Canon LUTs for C500 recordings. These are 1D LUTs to scale the image values to either Full range or Legal range, giving more contrast than the native Canon Log image.
EI160_EE_codex3d.lut EI200_EE_codex3d.lut EI250_EE_codex3d.lut EI320_EE_codex3d.lut EI400_EE_codex3d.lut EI500_EE_codex3d.lut EI640_EE_codex3d.lut EI800_EE_codex3d.lut EI1000_EE_codex3d.lut EI1280_EE_codex3d.lut EI1600_EE_codex3d.lut EI2000_EE_codex3d.lut EI2560_EE_codex3d.lut EI3200_EE_codex3d.lut	ARRI LUTs for Alexa LogC recordings. These 3D LUTs convert from LogC to Rec709. They resulting values are Extended range, so these LUTs are suitable for creating ProRes .mov files. If you have material with a range of Exposure Index values, use this expression in the LUT settings to apply the correct LUT based on Exposure Index metadata: EI{ExposureIndex}_EE_codex3d.lut
EI160_EL_codex3d.lut EI200_EL_codex3d.lut EI250_EL_codex3d.lut EI400_EL_codex3d.lut EI320_EL_codex3d.lut EI500_EL_codex3d.lut EI640_EL_codex3d.lut EI800_EL_codex3d.lut EI1000_EL_codex3d.lut EI1280_EL_codex3d.lut EI1600_EL_codex3d.lut EI2000_EL_codex3d.lut EI2560_EL_codex3d.lut EI3200_EL_codex3d.lu	ARRI LUTs for Alexa LogC recordings. These 3D LUTs convert from LogC to Rec709. They resulting values are Legal range, so these LUTs are suitable for creating DNxHD .mxf files. If you have material with a range of Exposure Index values, use this expression in the LUT settings to apply the correct LUT based on Exposure Index metadata: EI{ExposureIndex}_EL_codex3d.lut



Burn In Name	Description
Framecount_BottomCentre.xml Framecount_BottomLeft.xml Framecount_BottomRight.xml Framecount_TopCentre.xml Framecount_TopLeft.xml Framecount_TopRight.xml	Overlays a frame count, starting from 00000, at the indicated position on the image. Text is white.
Framelines_185_Full_Width_1920.xml Framelines_185_Full_Width_2880.xml Framelines_185_With_5_Percent_Safe_1920.xml Framelines_185_With_5_Percent_Safe_2880.xml Framelines_239_Full_Width_1920.xml Framelines_239_Full_Width_2880.xml Framelines_239_With_5_Percent_Safe_1920.xml Framelines_239_With_5_Percent_Safe_2880.xml Framelines_240_Full_Width_1920.xml Framelines_240_Full_Width_2880.xml Framelines_240_With_5_Percent_Safe_1920.xml Framelines_240_With_5_Percent_Safe_2880.xml	Overlays 1 pixel think lines showing the defined aspect ratio over the image. There are also 5_Percent_Safe options that move the framelines a further 5% towards the middle of the image in all directions. The framelines are white.
Logo_Large_Transparent_Centre.xml Logo_Medium_Transparent_Centre.xml Logo_Small_Opaque_BottomLeft.xml Logo_Small_Opaque_BottomRight.xml Logo_Small_Opaque_TopLeft.xml Logo_Small_Opaque_TopRight.xml logo.png	Overlays the logo.png file (see next section for how to load a new logo.png file). Large_Tranparent = 50% of image width, 10% opaque Medium_Transparent = 25% of image width, 10% opaque Small = 10% of image width, 100% opaque
Mask_185_Full_Width.xml Mask_185_With_5_Percent_Safe.xml Mask_239_Full_Width.xml Mask_239_With_5_Percent_Safe.xml Mask_240_Full_Width.xml Mask_240_With_5_Percent_Safe.xml	Overlays a 50% opaque mask to provide the defined aspect ratio. There are also 5_Percent_Safe options that move the mask a further 5% towards the middle of the image in all directions.

Roll_and_Shotname_BottomCentre.xml Roll_and_Shotname_BottomLeft.xml Roll_and_Shotname_BottomRight.xml Roll_and_Shotname_TopCentre.xml Roll_and_Shotname_TopLeft.xml Roll_and_Shotname_TopRight.xml	Overlays the Roll name and Shot name at the indicated position on the image. Text is white.
Roll_BottomCentre.xml Roll_BottomLeft.xml Roll_BottomRight.xml Roll_TopCentre.xml Roll_TopLeft.xml Roll_TopRight.xml	Overlays the Roll name at the indicated position. Text is white.
Shotname_BottomCentre.xml Shotname_BottomLeft.xml Shotname_BottomRight.xml Shotname_TopCentre.xml Shotname_TopLeft.xml Shotname_TopRight.xml	Overlays the Shotname name at the indicated position. Text is white.
Timecode_and_Framecount_BottomCentre.xml Timecode_and_Framecount_BottomLeft.xml Timecode_and_Framecount_BottomRight.xml Timecode_and_Framecount_TopCentre.xml Timecode_and_Framecount_TopLeft.xml Timecode_and_Framecount_TopRight.xml	Overlays the Timecode and Framecount at the indicated position. Text is white.
Timecode_BottomCentre.xml Timecode_BottomLeft.xml Timecode_BottomRight.xml Timecode_TopCentre.xml Timecode_TopLeft.xml Timecode_TopRight.xml	Overlays the Timecode at the indicated position. Text is white.

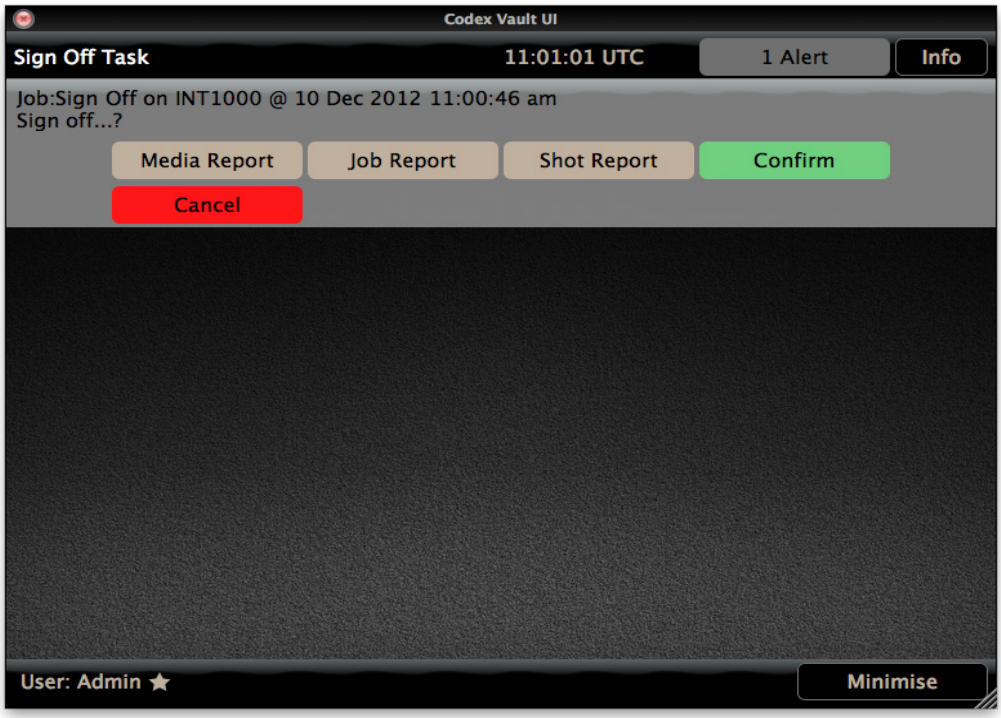


12.6 Media Sign Off Task

The Media Sign Off task should be configured to run when all required tasks have completed with a given media. It provides various PDF reports for the media, and also means a Media Clear task can be run.

(The software will display a prominent warning if a Media Clear is attempted before a Media Sign Off task has been completed.)

The Media Sign Off task provides the following prompt:



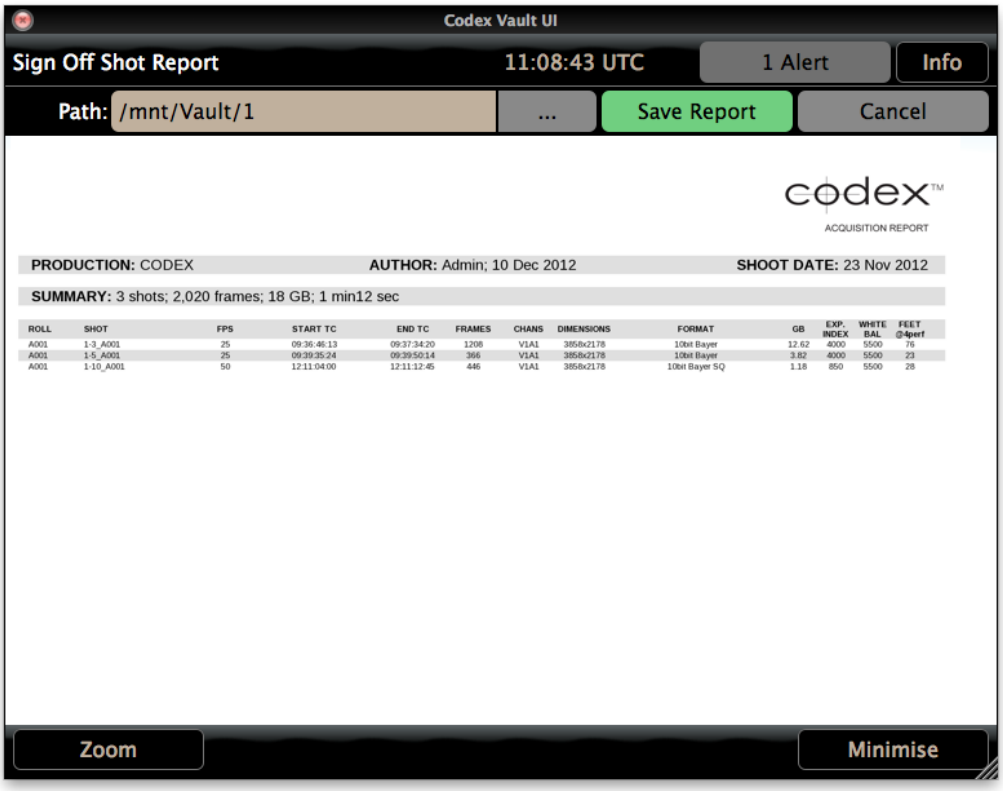
The Media Sign Off task has a range of options:

Media Report – provides a PDF report with a summary on the contents of the media and the history of jobs/tasks that have been carried out with the media.

Job Report – provides a PDF report on the current running job that the media is involved in.

Shot Report – provides a PDF report of the shots on the media, with key metadata such as Roll, Timecode, Duration, File size, and Format.

Here is an example of a Shot Report:


Codex Vault UI
Sign Off Shot Report
11:08:43 UTC
1 Alert
Info
Path: /mnt/Vault/1
...
Save Report
Cancel
codex
ACQUISITION REPORT
PRODUCTION: CODEX
AUTHOR: Admin; 10 Dec 2012
SHOOT DATE: 23 Nov 2012
SUMMARY: 3 shots; 2,020 frames; 18 GB; 1 min12 sec
ROLL SHOT FPS START TC END TC FRAMES CHANS DIMENSIONS FORMAT GB EXP. INDEX WHITE BAL FEET @4perf
A001 1-3_A001 25 09:36:46:13 09:37:34:20 1208 V1A1 3858x2178 10bit Bayer 12.62 4000 5500 76
A001 1-5_A001 25 09:39:35:24 09:39:50:14 366 V1A1 3858x2178 10bit Bayer 3.82 4000 5500 23
A001 1-10_A001 50 12:11:04:00 12:11:12:45 446 V1A1 3858x2178 10bit Bayer SQ 1.18 850 5500 28
Zoom
Minimise

Note: all shots must have matching ShootDate metadata in the format YYYYMMDD for this to appear on the Shot report.

Confirm – when the Confirm button is pressed the Vault marks the media as signed off (i.e. all required tasks have been completed) and a Media Clear can be carried out without any warnings

Cancel – cancels the Media Sign Off, meaning effectively that the media is not finished with.

When viewing a report, click the ... button next to the Path field. From here the User can select a directory on the Vault to save the report to. Select the Up arrow at the top right corner of the browser to move up from the current directory. A good directory on the local file system for saving reports is /tmp.

To save a report, first connect a USB stick or external drive. The reports will be saved to /mnt/Vault/1 which is the location of the first external drive that is connected.

If you have multiple external drives connected you can check their location on the Storage screen, and then enter the correct path (e.g. /mnt/Vault/2, mnt/Vault/3, etc.) to save the report to.

To access reports saved locally on the Vault, the root samba share can be used. It is recommended to only allow more advanced users to do this, as deleting or moving files when connected to the Vault in this way can stop the system from working.

For further details on connecting to samba shares refer to the Codex guide “Getting Logs and Loading LUTs, Burn-Ins, and sysconfigs”.

12.7 Media Verify Task

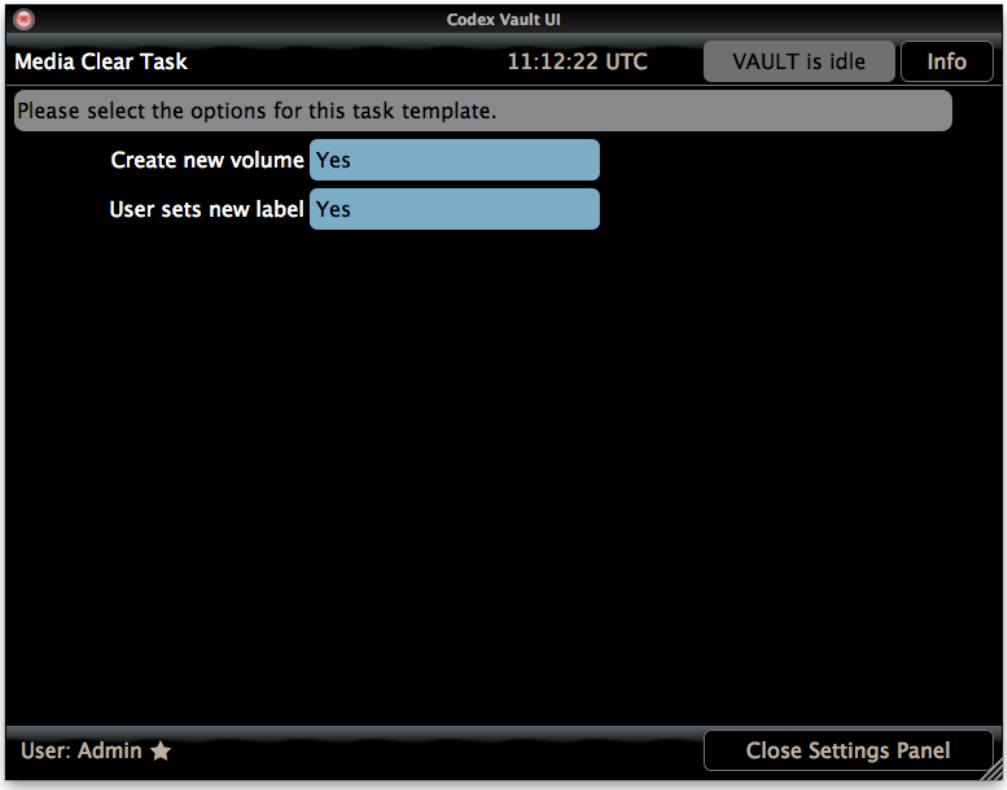
The Media Verify Task can be used to Create CRC32 samples (checksums) for shots if they were not created at the point of recording.

The Vault can use CRC32 checksums for each frame to verify that media has been cloned successfully.
Note: the Clone Task can also be configured to Create CRC32 checksums on the source media and check these on the destination media during the clone process.

12.8 Media Clear Task

The Media Clear Task formats the media so that it can be used again.

When setting up a Media Clear task in Settings you can specify:



Create new volume: Yes or No.

If this is set to No, the media will need to have a Roll created on the recorder before it can be used.

If this is set to Yes the media will be reformatted with a new Roll number, and the additional option will be available:

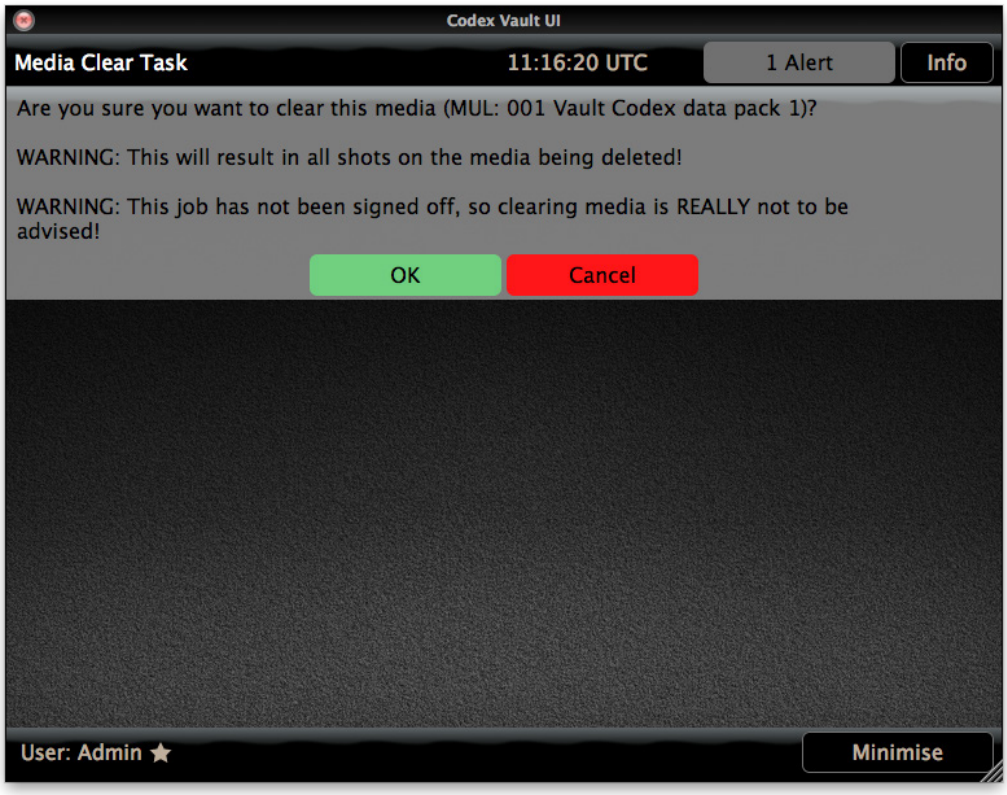
User sets new label: Yes or No.

If this is set to Yes the user will be asked to input a new Roll number for the media.

If this is set to No the Vault will automatically create a new Roll with a length of 8 characters, incremented from the previous Roll number. Here are some examples of Roll numbers created automatically by the Vault:

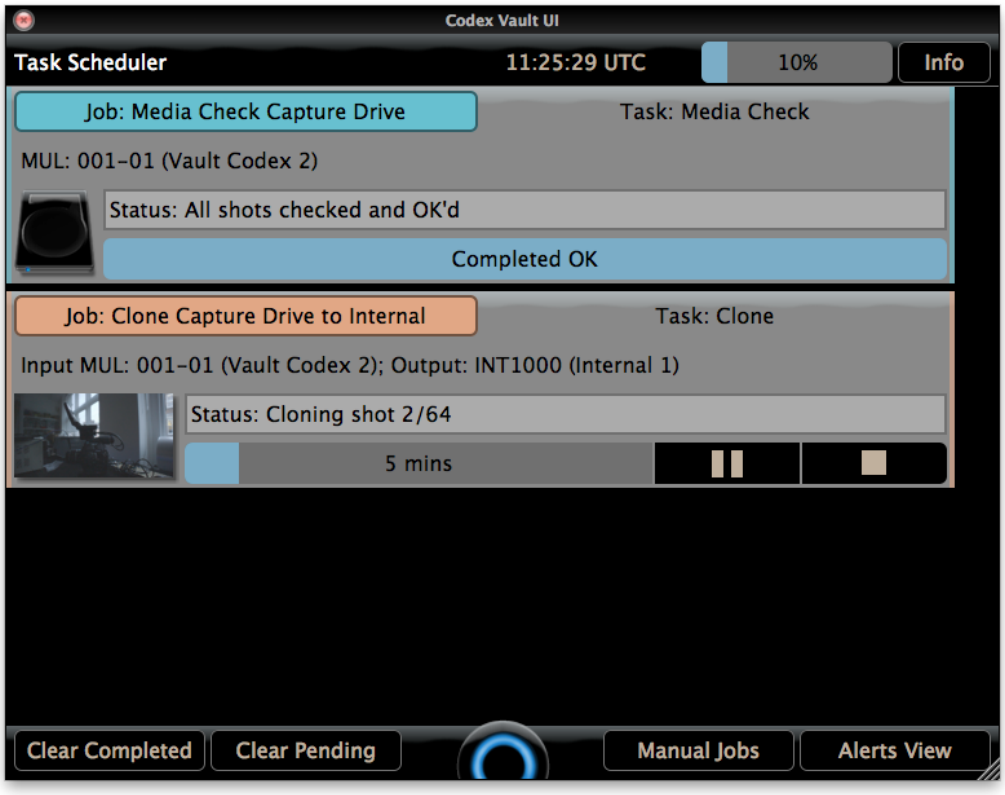
Previous volume name	New volume name created automatically by Vault
001	00100002
00100002	00100003
204	20400002
A263	A2630002

If a Media Sign Off has not been completed before the Media Clear then a prominent warning will be displayed as shown below:


Codex Vault UI
Media Clear Task
11:16:20 UTC
1 Alert
Info
Are you sure you want to clear this media (MUL: 001 Vault Codex data pack 1)?
WARNING: This will result in all shots on the media being deleted!
WARNING: This job has not been signed off, so clearing media is REALLY not to be advised!
OK
Cancel
User: Admin
Minimise

13. Task Scheduler

The Task Scheduler is the main screen that the User will interact with on a daily basis. It displays progress information about active Jobs (Work Templates that are running) and information about previous Jobs, as shown below:



Jobs can be paused or stopped if required using the buttons next to the progress bar for an individual job.

If a Job is running using a resource (e.g. a particular media) then you cannot start another job that will use the same resource. This behaviour can be changed with a special system configuration file to allow parallel tasks. See the Appendix for details.

The list of Jobs on the Task Scheduler screen is cleared when the Vault is restarted.

Tasks that belong to the same Job are colour coded for clarity.

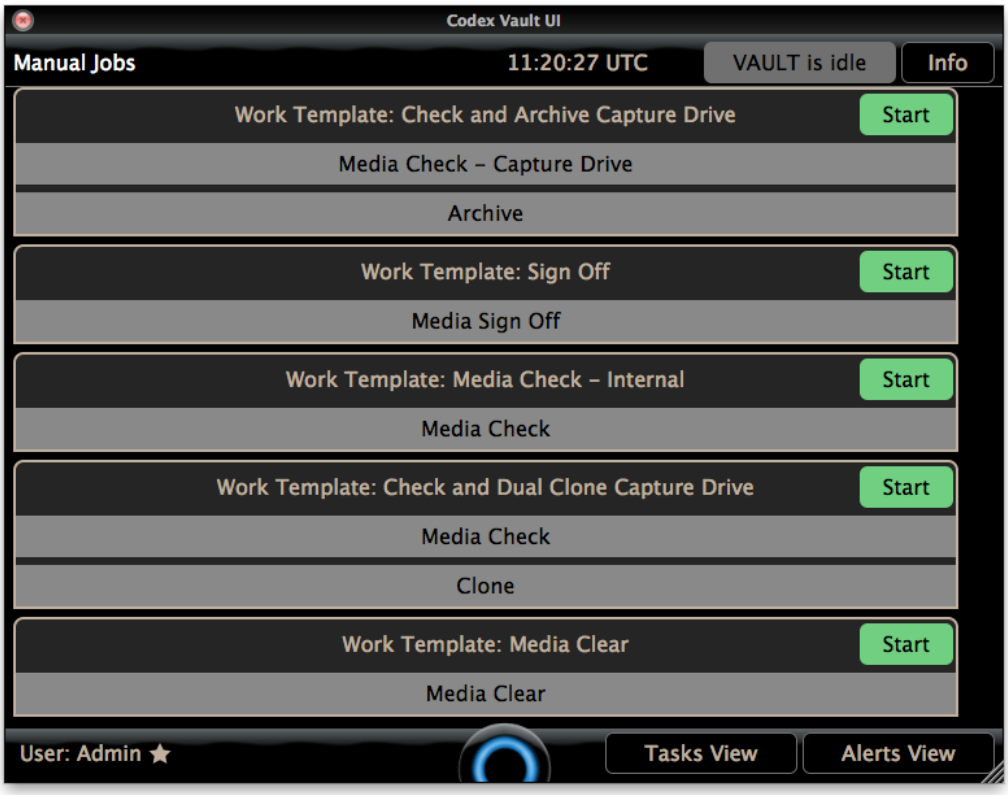
The Clear Completed and Clear Pending buttons can be used to remove jobs from the Task Scheduler that have a status of completed or pending. This can be useful to simplify the screen if lots of tasks have been running.

The Vault cannot be powered off when there are tasks running. Wait for the tasks to finish, or cancel them before powering off.

Ensure a reliable power source because if power is lost during the middle of a Job it will have to be started again.

13.1 Manual Jobs

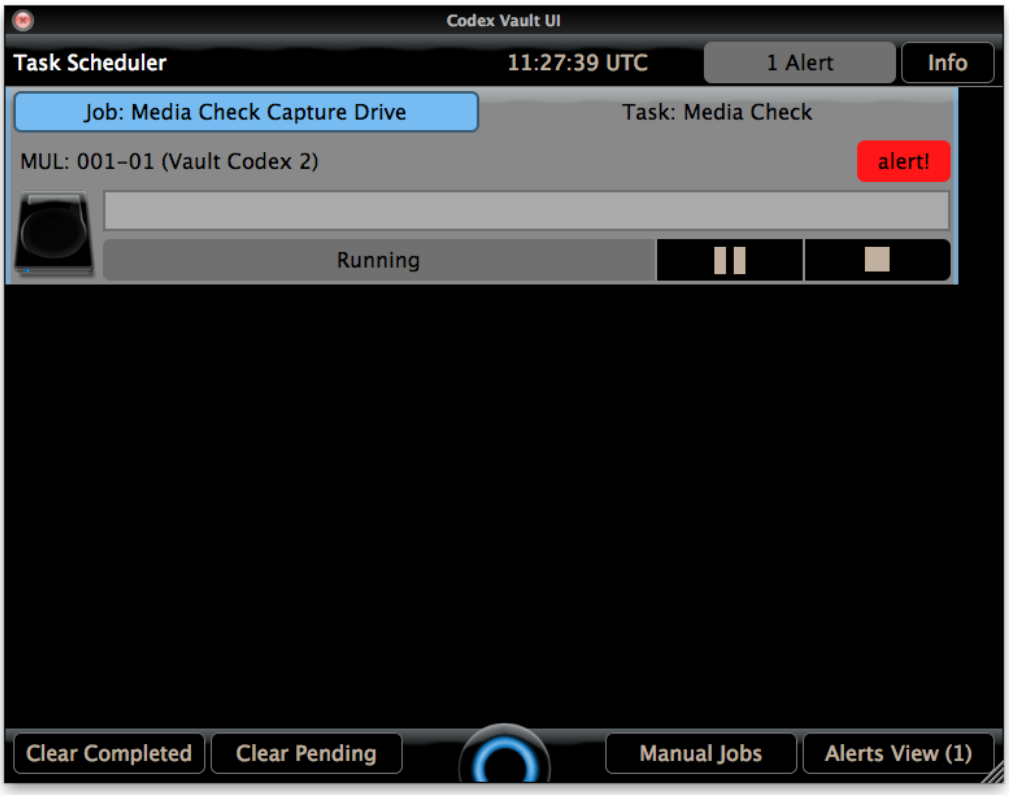
When a Work Template is set up to be triggered manually, it is available on the Manual Jobs screen, and the User can press Start to begin any job:



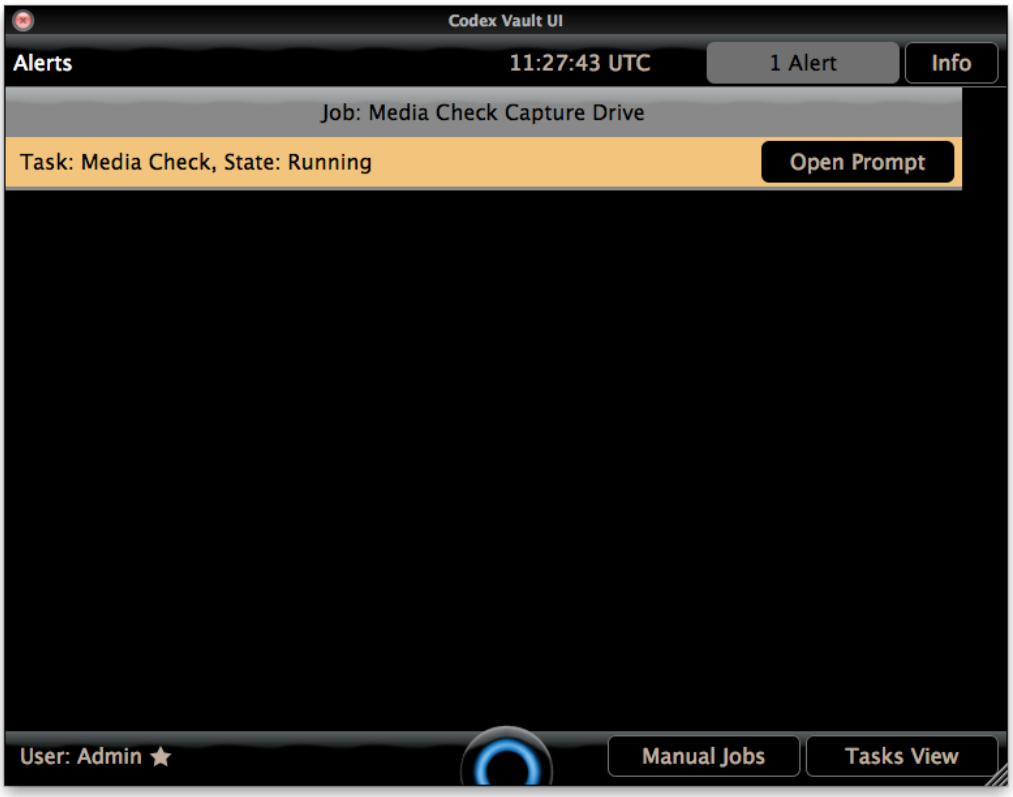
If the required media is not available to start a manual job then an error message will be displayed.

13.2 Alerts View

If there are Alerts that require a response from the User than an 'alert!' button is shown on the Task Scheduler screen:



To view a full list of alerts press the Alerts View button:



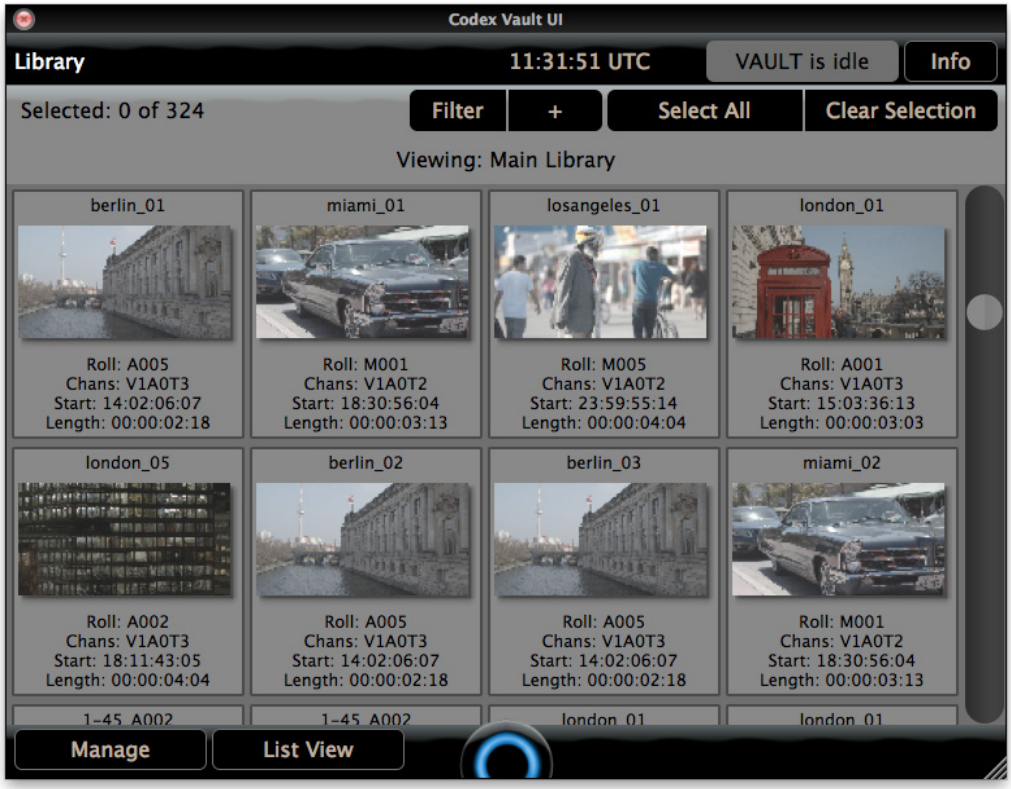
Press 'Open Message' for a to view details and make a decision on the specific alert.

14. Library

The general Library is the same as Media Check Shot Library except it applies to all media loaded in the Vault rather than just the media currently involved in a Media Check.

14.1 Shot Library

The Shot Library allows the User to view thumbnails (or a list of shotnames) and key metadata for shots:

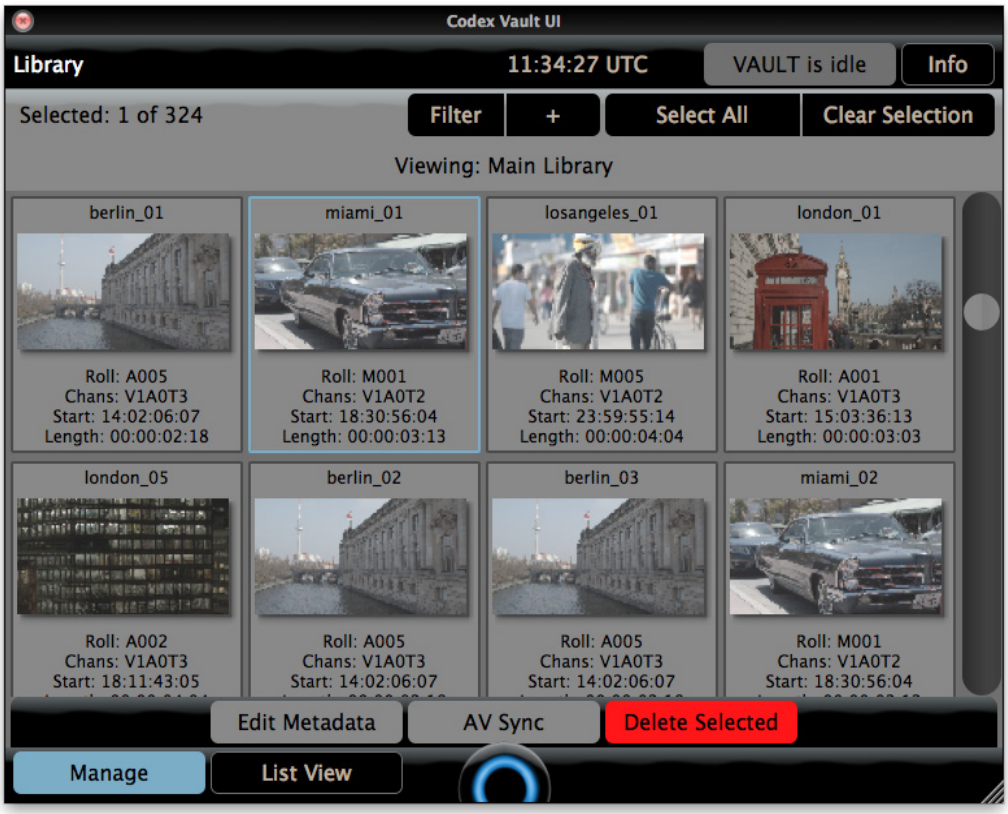


If accessing the Shot Library during a Media Check this can be useful to assist the User in confirming the results of the Media Check. To activate List View, click the List View button at the bottom of the screen.

The information shown with each shot thumbnail is:

Roll: Roll name metadata
Chans: Number of channels of video, audio and timecode information.
Start: Start timecode of shot.
Length: Length of shot expressed as HH:MM:SS:FF (Hours: Minutes: Seconds: Frames)

To view/edit metadata for a shot click on the thumbnail so the shot is highlighted in blue. Then click the Manage button and click Edit Metadata:



Also shown is the option to Delete Selected, which deletes any selected shots.

WARNING: Deleting a shot is an irreversible process so be very sure you want to delete a shot when selecting this option!

The Edit Metadata screen shows the full range of clip metadata, divided into these headings:

- Filecard: a selection of metadata most likely to be edited
- Project: a selection of metadata that is the same for all clips on a Roll, and less likely to be edited
- All: every metadata item stored with the shot(s)
- Shot Info: general metadata information that is not editable

Click in a field to make changes to metadata, then either Save & Finish or Quit & Forget to return to the Shot Library.

Fields that are grey in colour cannot be edited.

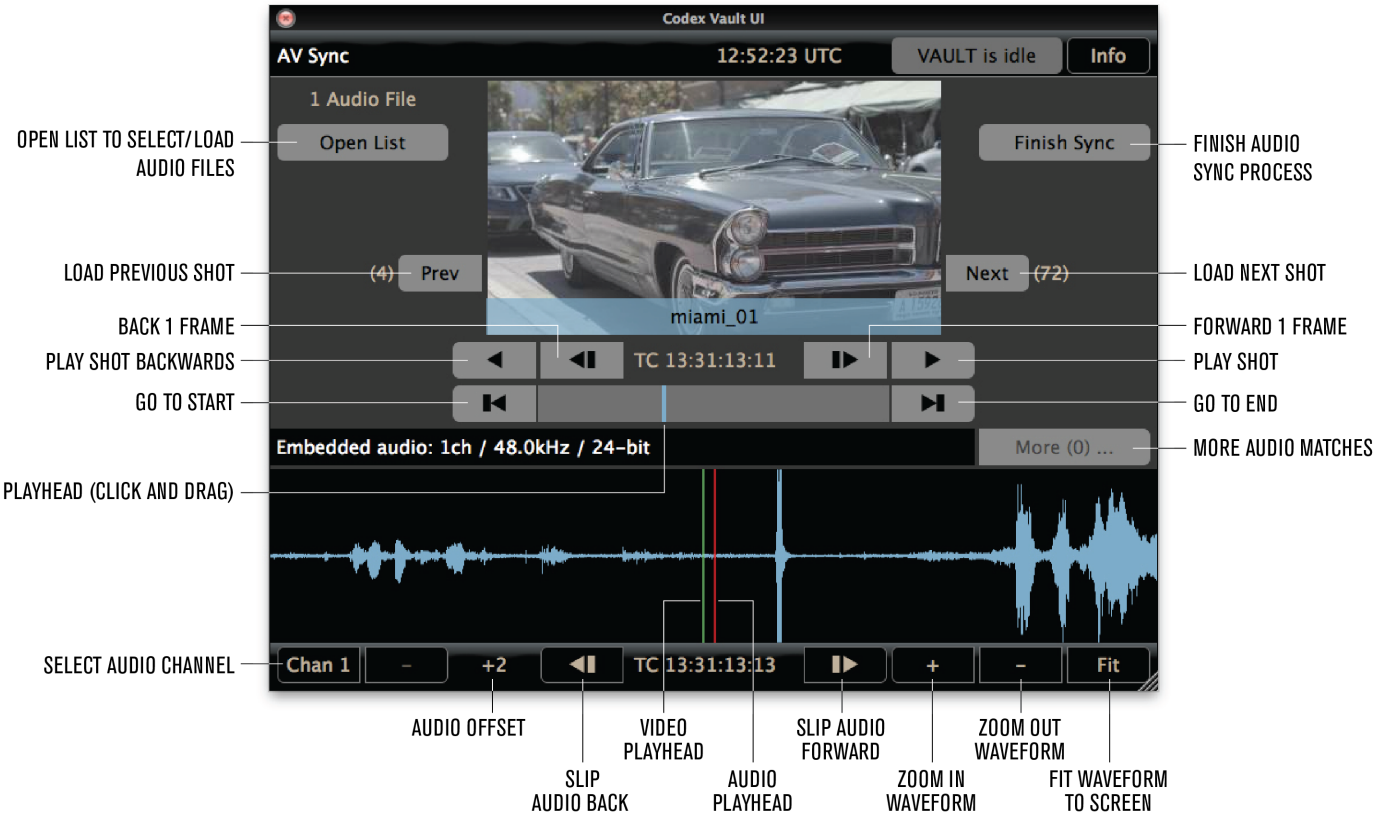
The top-centre thumbnail that is highlighted blue is the shot selected for editing. Click the thumbnail to the left or right to select that shot for editing.

Click the Edit All button to select all shots for editing. When this is done any metadata that is common to all selected shots will be shown as normal. Any metadata that varies between the selected shots will be shown as <mixed>.

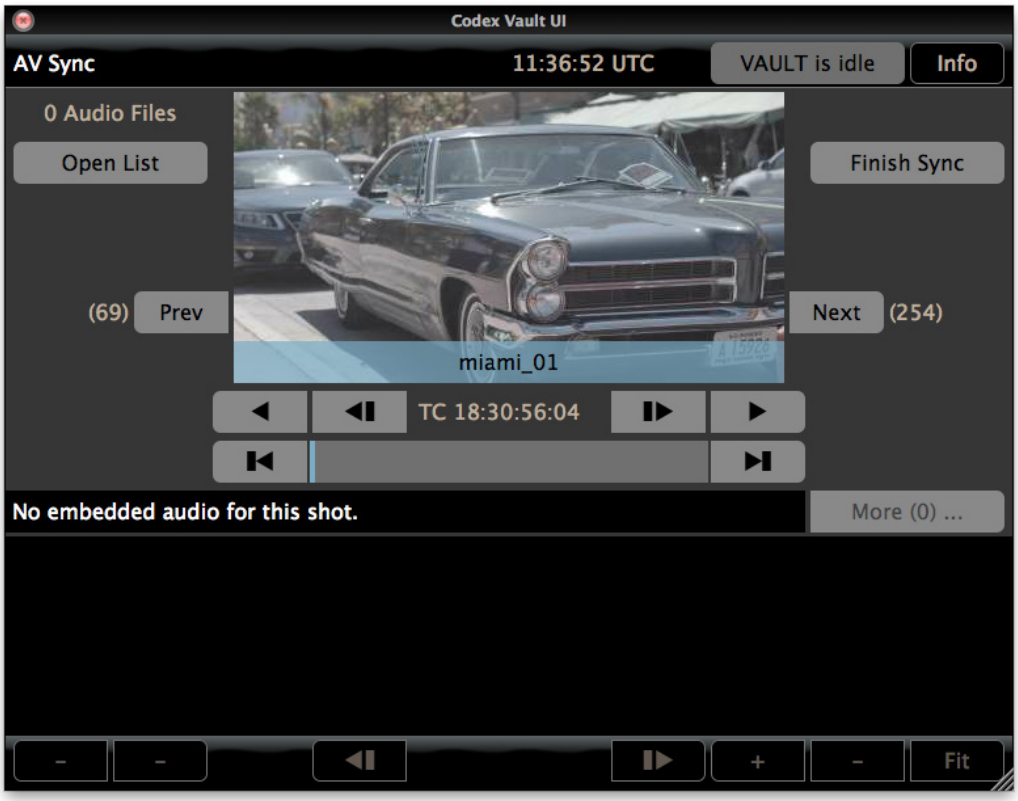
14.2 AV Sync and On Screen Playback

The AV Sync option allows you to playback shots on the Vault and synchronize audio files from an external recorder to shots based on timecode. This feature is enabled with a special system configuration file that is detailed in the Appendix.

When in the Library click the Manage button and then AV Sync.



If your shots were not recorded with audio the waveform area at the bottom of the screen will be empty:

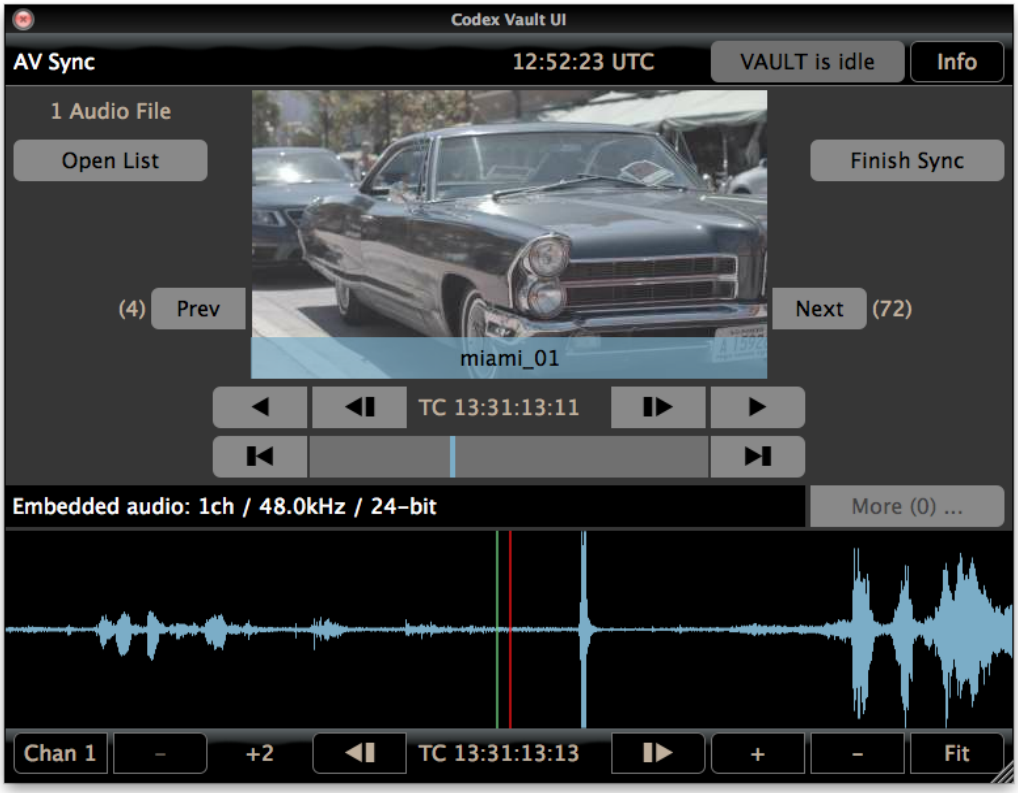


Click the **Open List** button and this will show a view of the available audio files. This will initially be empty:

Click the **Fetch More...** button to load files from an attached device, e.g. USB drive.

Locate files, select them and click **Continue**.

Click the **Auto Sync All** button and the audio files will be sync'ed to your shots based on timecode.



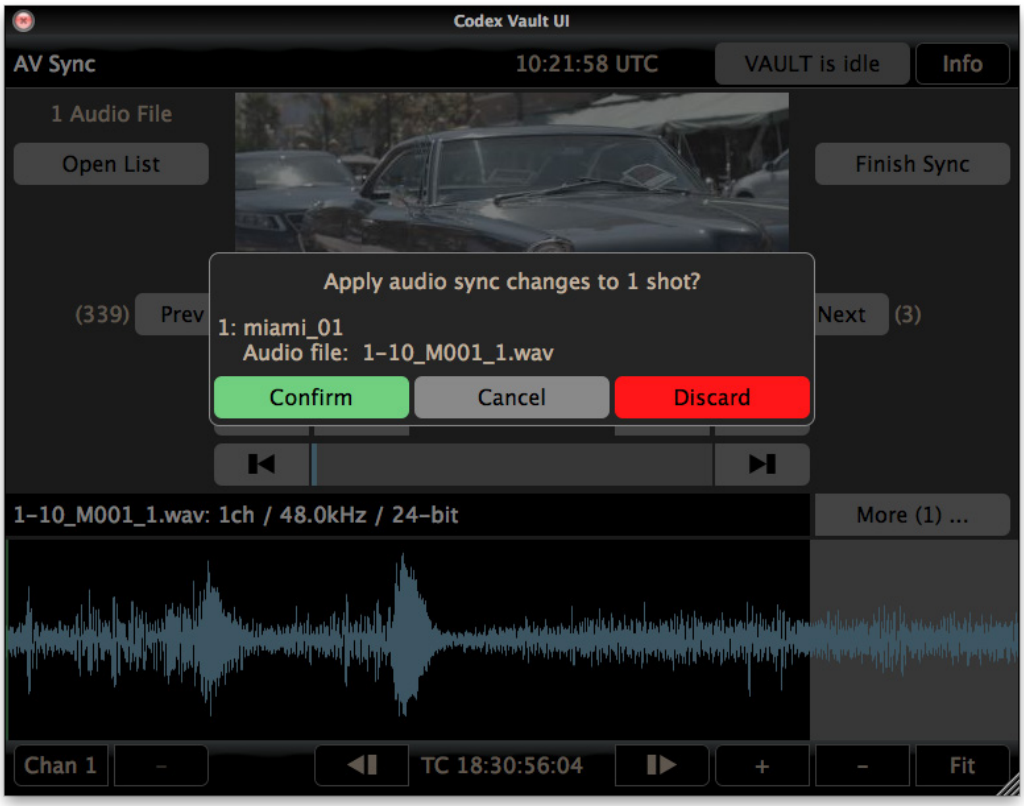
Press the **Play shot** button to check the sync has been successful. You can step through using the **Forward 1 frame** and **Back 1 frame** buttons to confirm this with accuracy.

If the sync is not accurate, look at the image and line up the Playhead with the clapper frame. Then use the **Slip audio forward** or **Slip audio back** buttons to slip the audio in 0.25 frame increments to line up the Audio playhead with the clapper peak on the waveform. Now when you play the shot the audio and video should be sync'd.

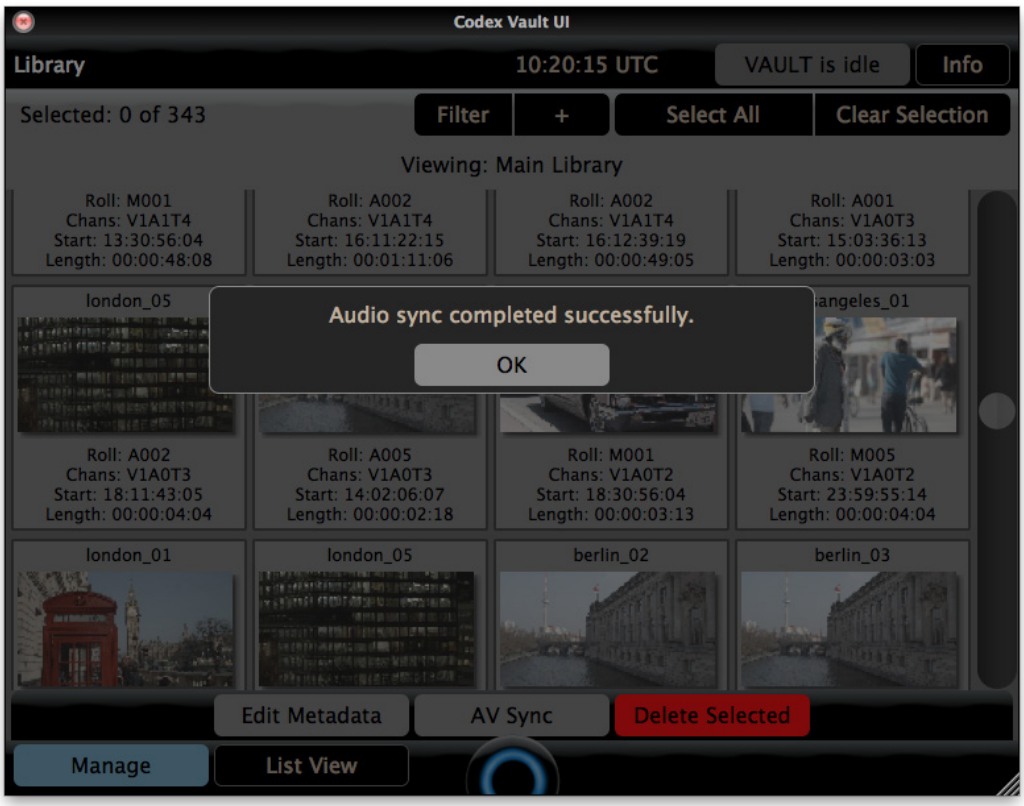
If required you can use the **Zoom in waveform** and **Zoom out waveform** controls for greater accuracy.

If there is more than one audio file matching to a particular shot, click the **More** button to choose which audio file to sync.

Once the sync on all shots has been checked press the **Finish Sync** button and then Confirm to finalise the changes:



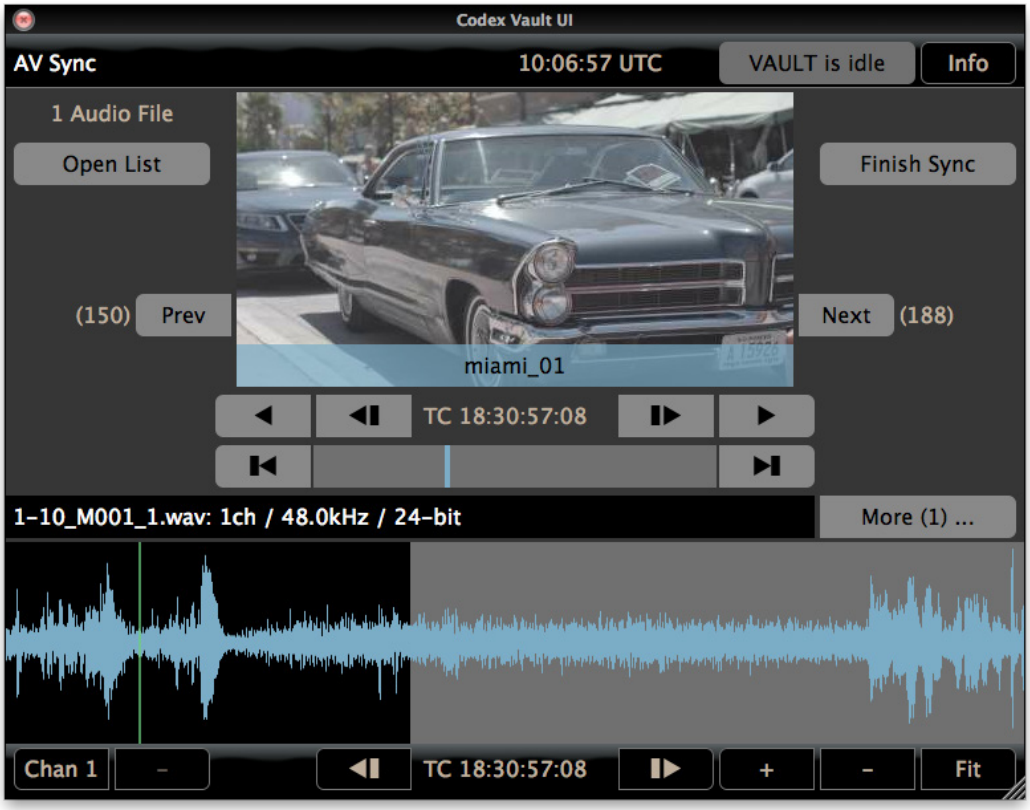
This screen will then be shown:



When an audio sync is done a new version of the shot is created with the sync'd audio. The original shot remains and will have '(original)'

added to the end of the shot name, as shown at the bottom right of this image:

Note: if the audio file is longer than the video file the later part of the audio waveform will be shown in grey:



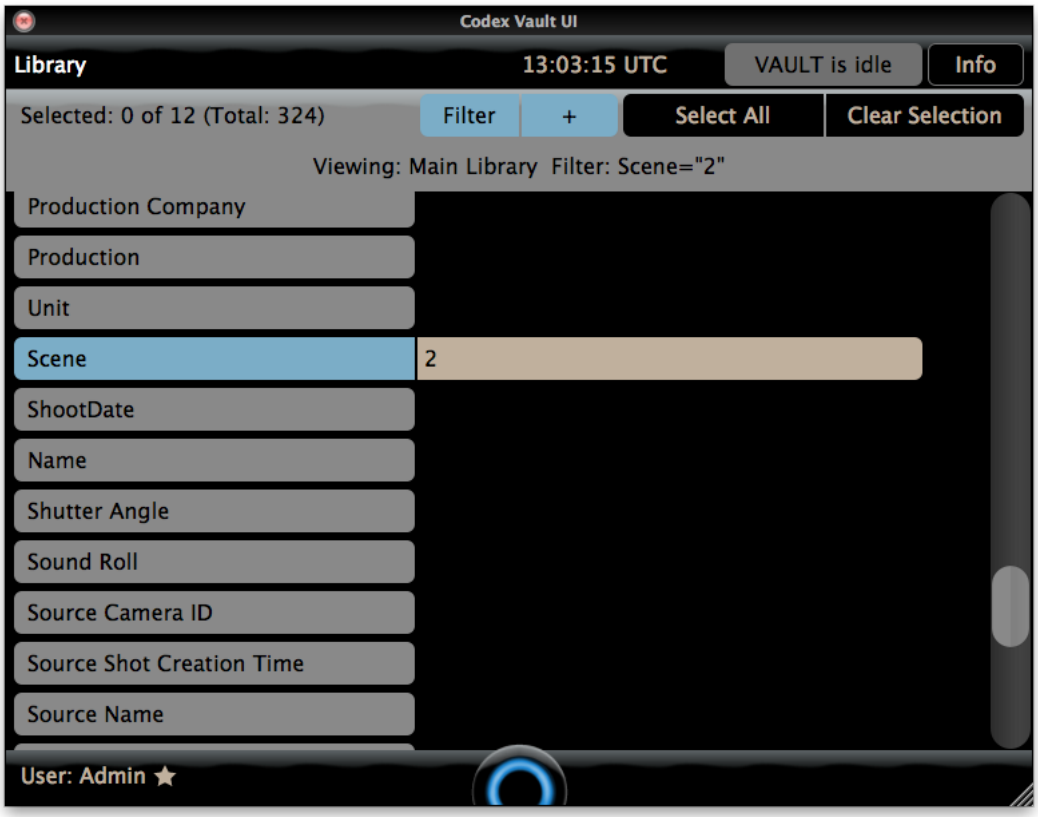
14.3 Filter in Library

The Filter option in the Shot Library allows you to limit the shots that are visible. This is done by applying a filter based on metadata. This can be useful if you want to view or edit metadata on multiple shots that share common metadata, e.g. all the shots from a Roll.

Click the + button to choose a metadata item to filter on:

At the top of the list are the options to **Filter on Datapack** (physical media) and **Filter on Source MUL** (if there is material from multiple MULs on a single media – this is most likely with a Transfer Drive or the Internal Storage):

The rest of the column on the left shows all metadata that is stored with the shots. Click on one of these to enter a value. For example, if we just want to see the shots from scene 2 we would scroll down and enter this value next to the Scene metadata item:

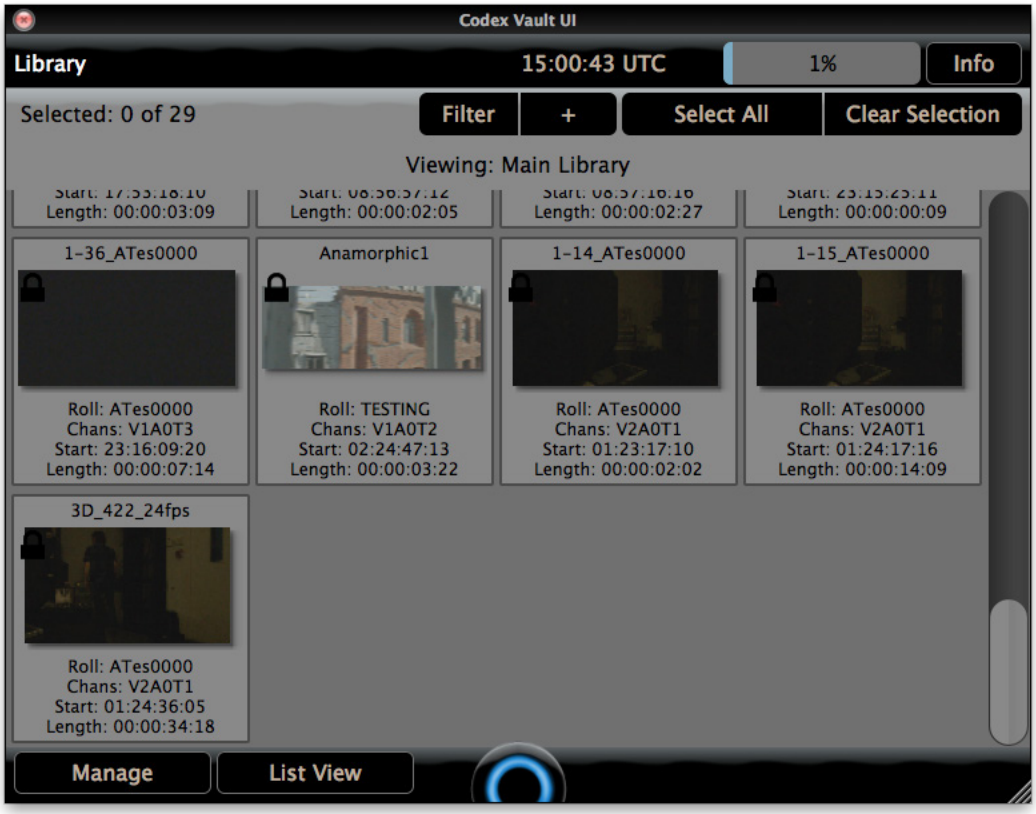


Then click the + button to return to the Library View and click the Filter button to only show shots that match the filter:

Click the Filter button to turn the filter on and off.

Values can be entered for multiple metadata items and shots will only be shown that match the values entered for all items.

Shots will be locked against editing during a Job such as an Archive, Clone, or Generate. When shots are locked in the Library a padlock icon is shown over the shot thumbnail:



15. Storage

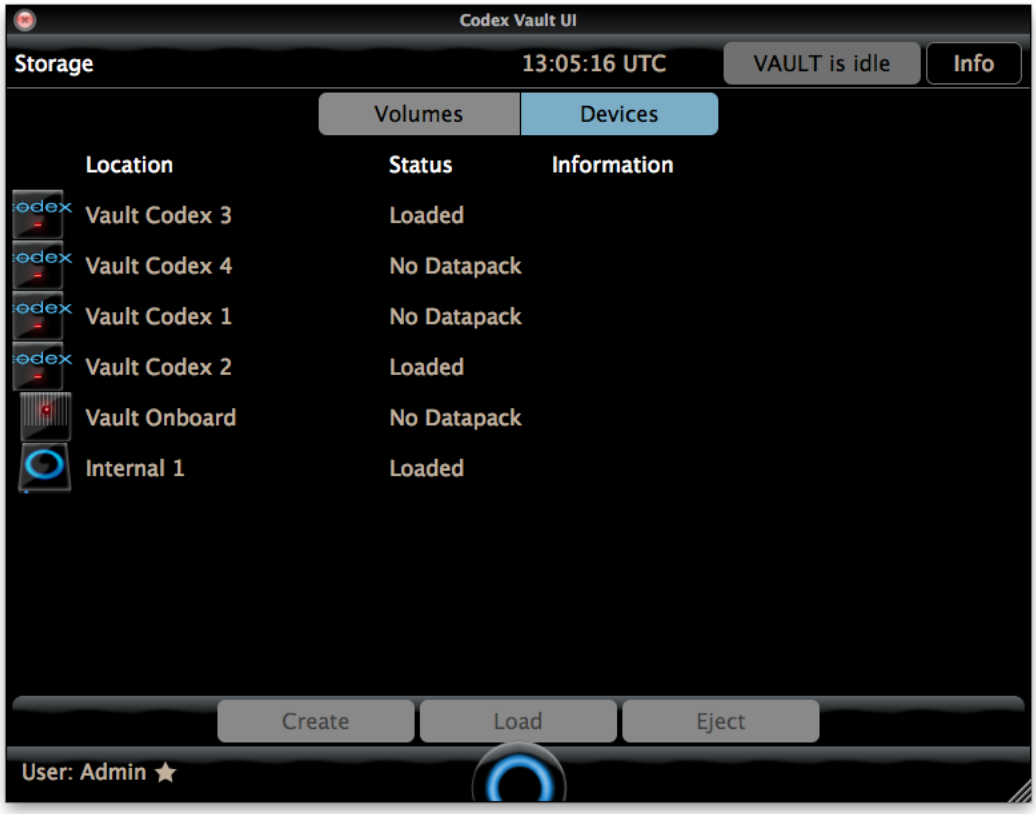
The Storage screen allows the User to view general information about media that is loaded in the Vault.

The Volumes section shows details of the volumes that are loaded including their name, formatting type, location, status and the free space.

Before physically removing a storage device (Capture Drive or external hard disk) it should be ejected from this screen by selecting it and then pressing the Eject button:

The Devices section shows details of the devices including all media ports and their status.

There are also options to Create, Load, and Eject:



The Create option can be used on unformatted Codex media to apply a name and specify the RAID type in order that it can be used by the Vault.

If an unformatted Capture Drive or Datapack is inserted into the Vault an error message like this will be displayed:

“Error – Vault Codex data pack 3 contains an unformatted Datapack. This cannot be used.”

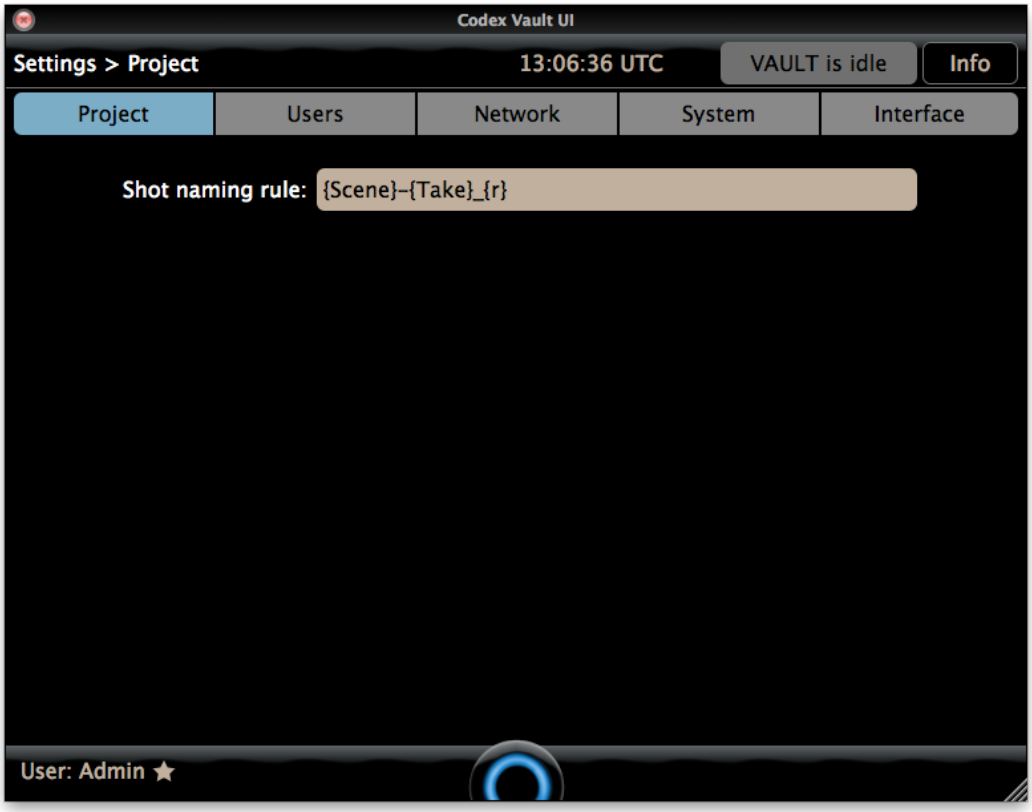
16. Settings

From the Vault Main Menu select ‘Settings’. This option is only available to accounts with Administrator privileges. This screen provides the following menus:

16.1 Project

Here the Administrator can set the ‘Shot naming rule’ for the project. When using Codex Onboard S or M recorders, this setting on the Vault should be set to match the Setup->Slate->Shot naming rule on the recorder(s).

This is important when metadata is being edited on the Vault so that if an individual metadata item (e.g. Take number) gets changed, the overall Shot name will also get updated correctly.



16.2 Users

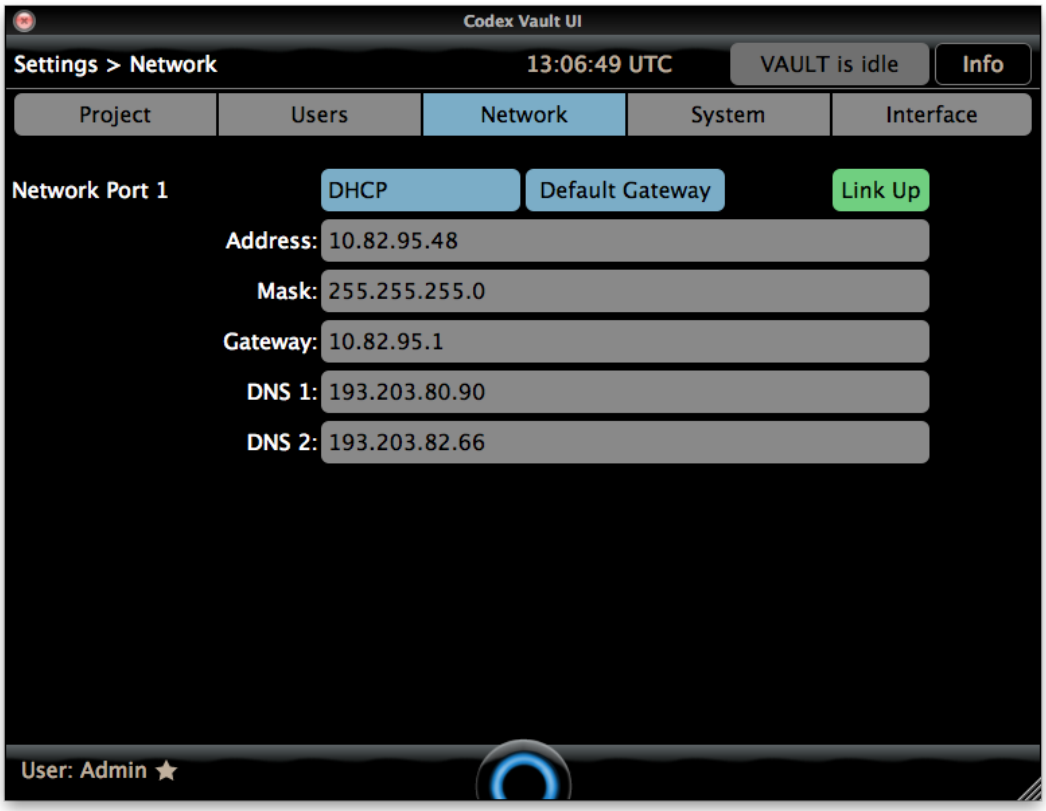
This screen is used for managing user accounts.

When logged in you can delete other accounts, but not your own account. To create additional user accounts select 'Add a New User'. Complete all possible fields and then highlight the Administrator button if the user should have administrative privileges. Then select Save & Finish.

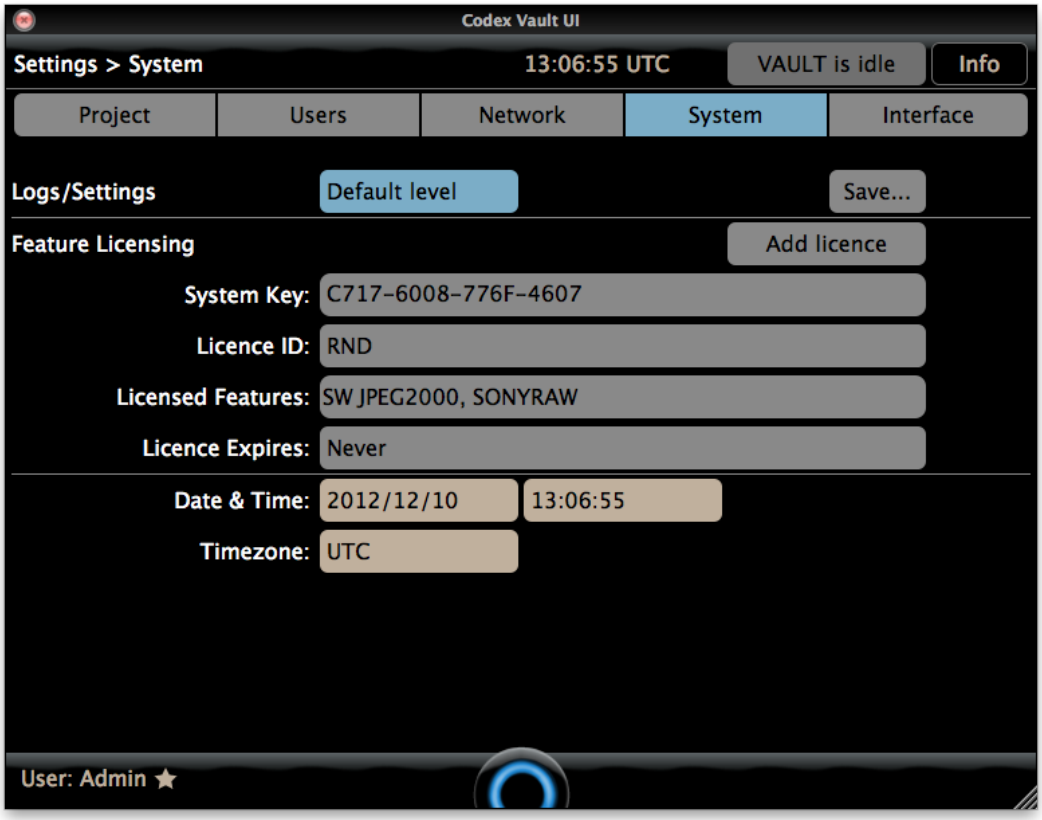
16.3 Network

Click to choose if the Network port is Static or DHCP. When set to static you must manually enter the rest of the settings. When set to DHCP the Vault should be connected to a DHCP server and it will be assigned network settings automatically.

Click the Info button (top right) from any screen to view the network IP address of the Vault.


Codex Vault UI
Settings > Network
13:06:49 UTC
VAULT is idle
Info
Project
Users
Network
System
Interface
Network Port 1
DHCP
Default Gateway
Link Up
Address:
10.82.95.48
Mask:
255.255.255.0
Gateway:
10.82.95.1
DNS 1:
193.203.80.90
DNS 2:
193.203.82.66
User: Admin

16.4 System


Codex Vault UI
Settings > System
13:06:55 UTC
VAULT is idle
Info
Project
Users
Network
System
Interface
Logs/Settings
Default level
Save...
Feature Licensing
Add licence
System Key:
C717-6008-776F-4607
Licence ID:
RND
Licensed Features:
SW JPEG2000, SONYRAW
Licence Expires:
Never
Date & Time:
2012/12/10
13:06:55
Timezone:
UTC
User: Admin

This screen is used for saving system log files, adding feature licences, and adjusting the system date/time.

If logs are requested by Codex support they will specify if they require Default level or Full level logs. To save the logs to a USB stick plug it in and then click the Save... button and a file browser will appear. Choose the USB stick and then click Select to save the logs.

If you don't have a USB stick available choose use the /tmp directory on the Vault system disk to save the logs to. To access logs saved locally on the Vault the root samba share can be used. It is recommended to only allow more advanced users to do this, as deleting or moving files when connected to the Vault in this way can stop the system from working.

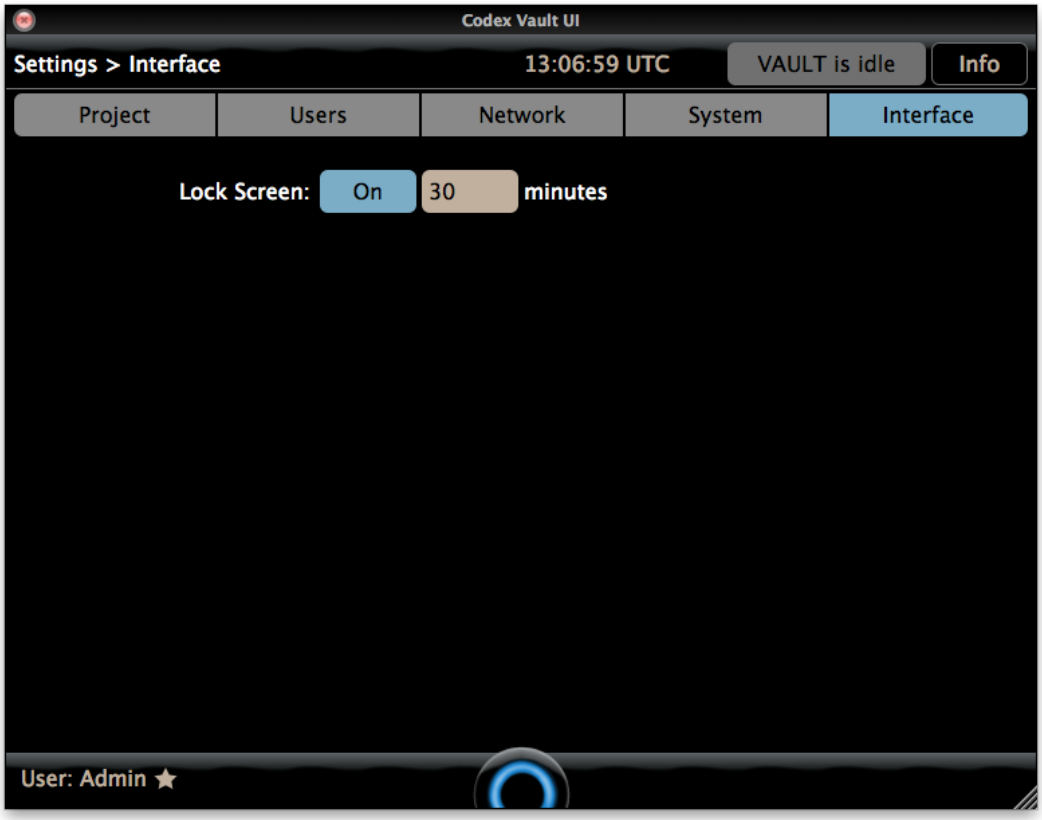
For further details on connecting to samba shares refer to the Codex guide "Getting Logs and Loading LUTs, Burn-Ins, and sysconfigs".

If you have been issued a licence key by Codex for a specific software feature use the Add Licence button and copy/paste the licence key into the box and click OK.

The timezone setting by default is UTC, which is equivalent to GMT. To adjust the timezone you can add an offset of between -12 and +14 hours. For example UTC-08 or UTC+10.

If necessary the Date and Time can be entered manually. After a change is made click the Save Changes button.

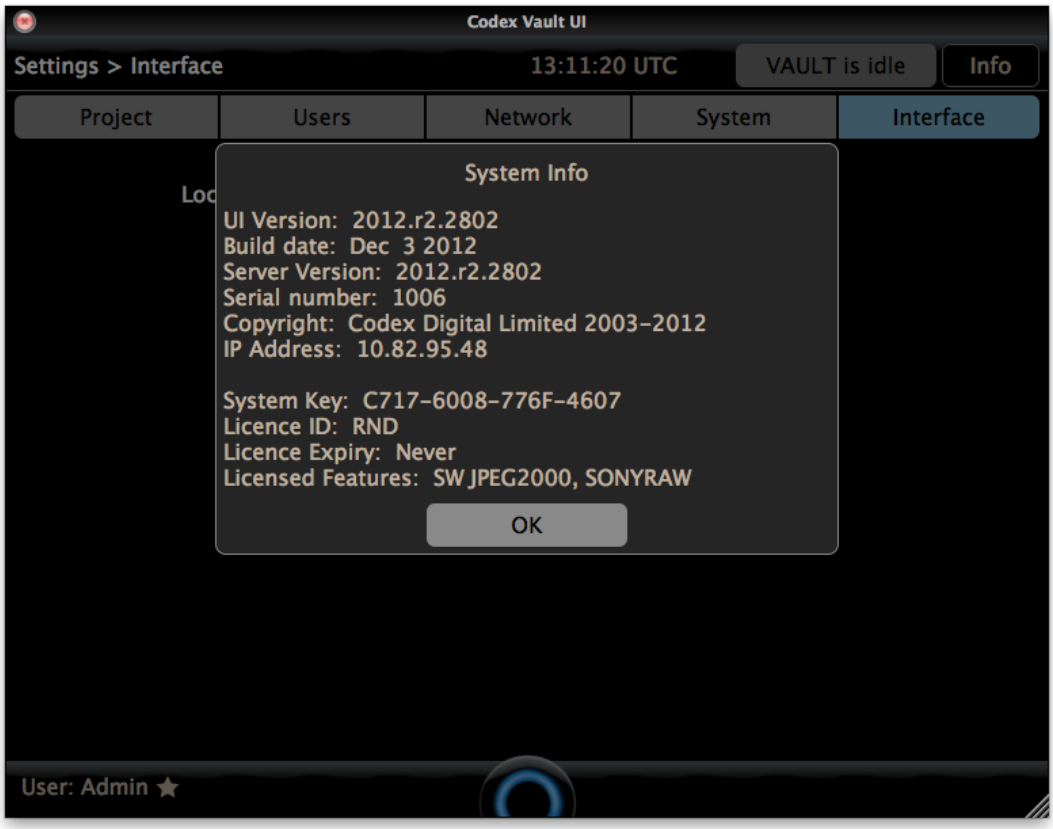
16.5 Interface



On this screen the Vault can be set to automatically lock after a specified amount of time. Once the Vault is locked then a user account and password is required to log back in.

17. Info

At the top of the Vault screen is an overall progress bar for tasks, and to the right of this is the Info button. The image below shows the information displayed in the Info box:



In the Info box there is a Remote Connection option. This allows you to connect to the Vault from another computer using TeamViewer to observe and control the Vault. TeamViewer is a free application that can be downloaded from www.teamviewer.com:

With the Vault connected to a network click Start and a 9 digit ID should be displayed in the Remote Connection box. From another computer you can then run the TeamViewer software and enter this ID and the password **codex** to connect to the Vault.

Press ctrl-T on your keyboard to disable the touchscreen on the Vault so you can use your keyboard and mouse via TeamViewer.

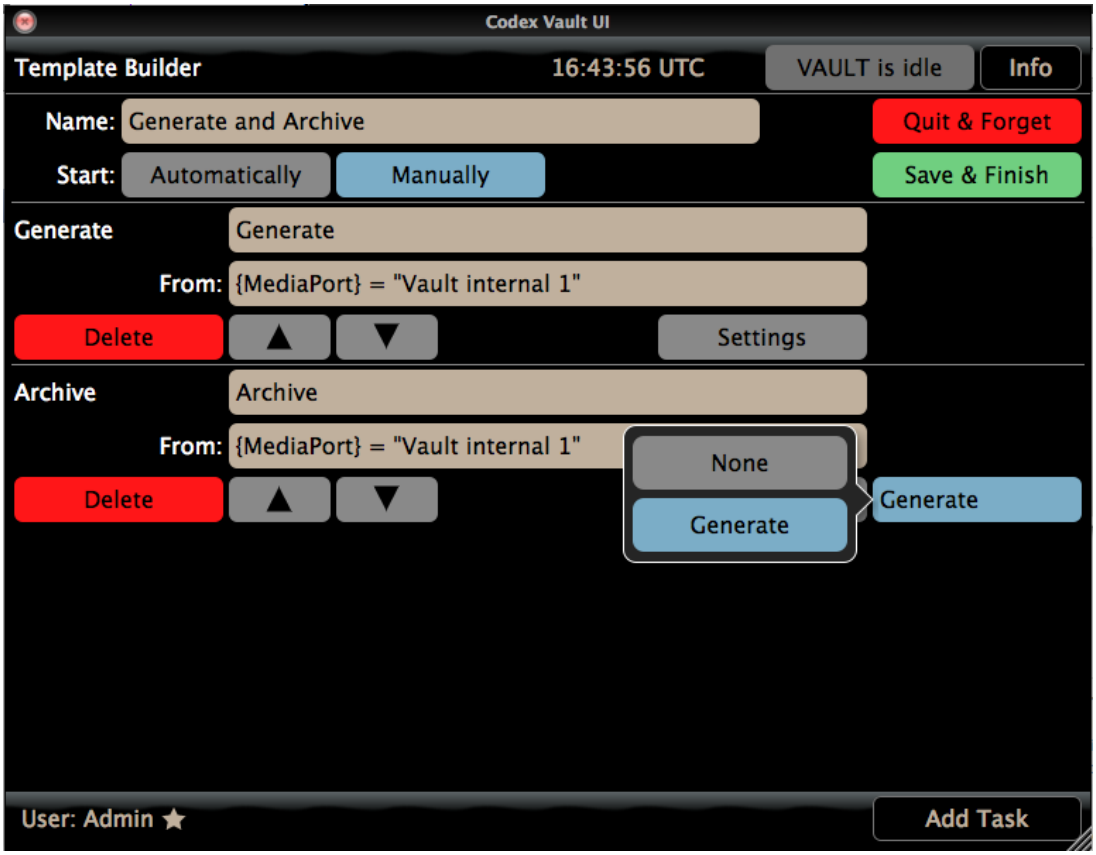
18. Special configuration files - sysconfig

Some features are available on the Vault that are still in a beta phase. To access these features a beta agreement needs to be in place with Codex, and a configuration file called a sysconfig needs to be present on the Vault. The AV Sync and Parallel Tasks features require this sysconfig file. Please contact Codex support to gain access to these features.

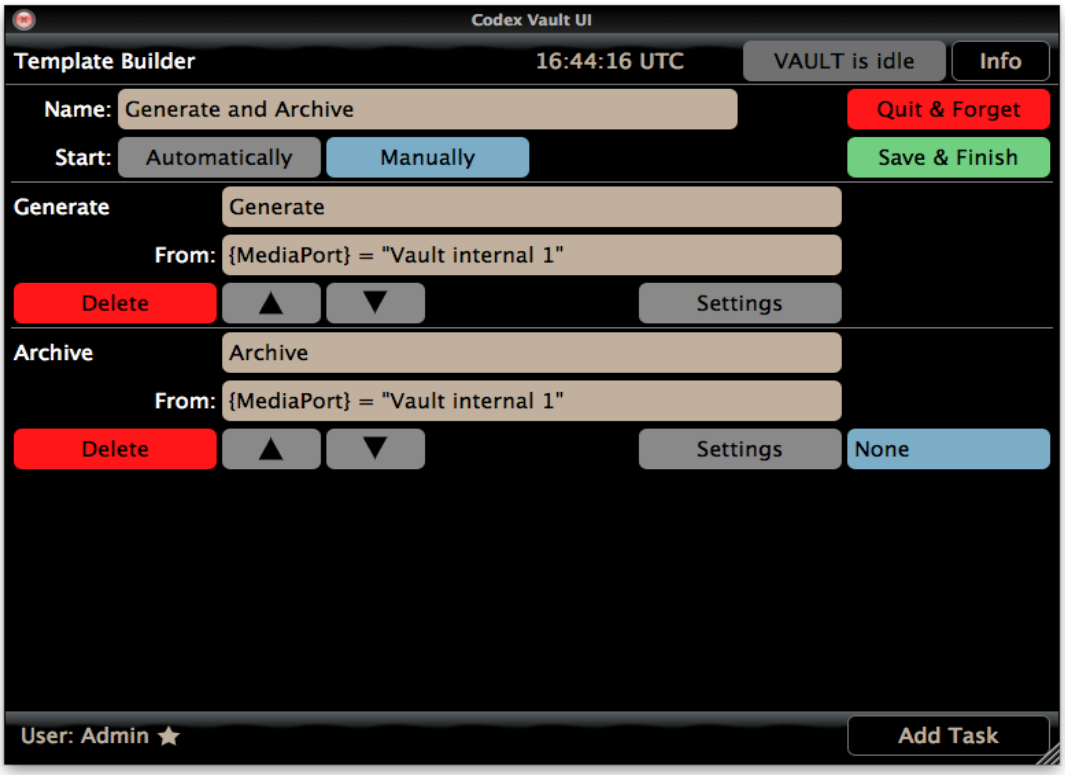
18.1 Parallel Tasks

With the Parallel Tasks feature enabled the Vault can use media for more than one task at the same time. For example the Internal Storage could be used for both a Generate and an Archive task at the same time.

We will look at an example of how to set this up. With the sysconfig applied, when making a Work Template there is an extra setting to the right of each Task (apart from the first task):



By default the first Task must finish before the second Task begins, and the second Task must finish before the third Task begins, and so on. This new setting on the right of the screen shows which Task must finish before that particular Task can begin. By changing this setting to None, it means the Task does not need to wait for a previous Task to complete:

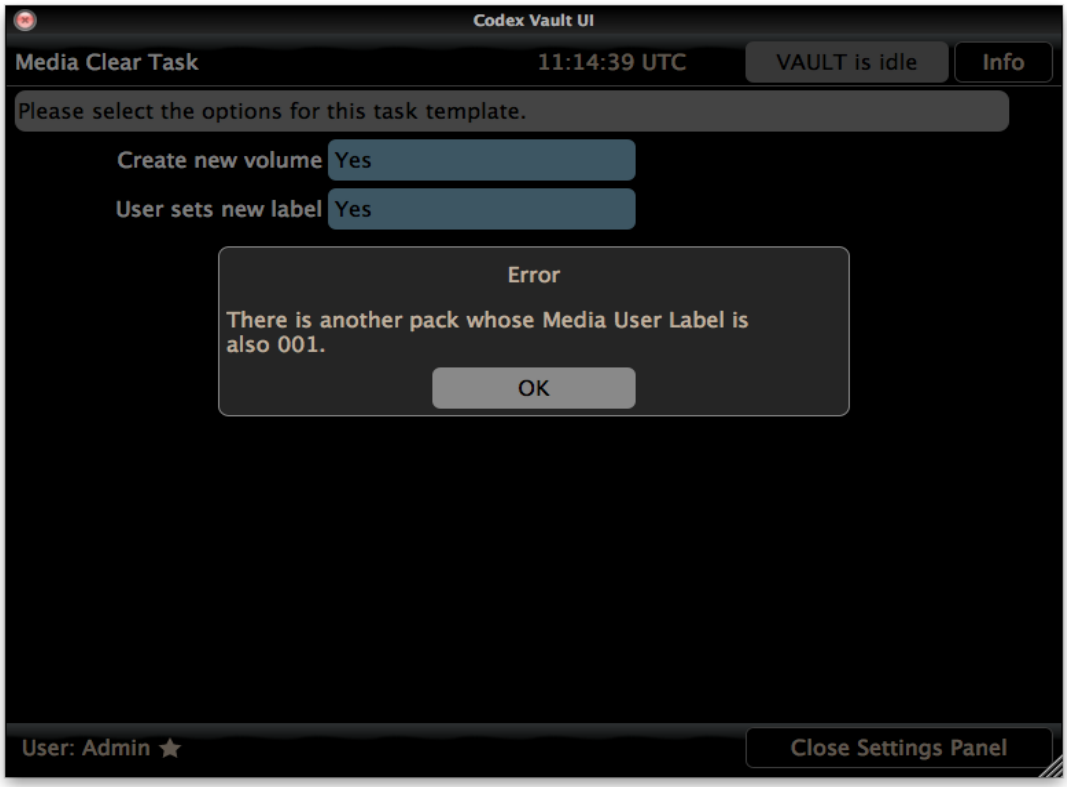


Now the Generate and Archive Tasks can run from the Internal Storage in parallel.

19. Using media with a clashing name

The Vault keeps a database of all the Capture Drives and Datapacks (media) that get loaded. When a Task is started the Vault will check that the name of the media being used does not clash with any media that has been loaded previously. If a clash is detected you will be given the opportunity to rename the media before proceeding.

It is strongly recommended to rename the media at this stage. If this is not done there is the possibility of files with clashing Roll and Timecode information being delivered to post production which will cause a great deal of confusion.



20. Backing up and clearing the Vault database before a new project

Before the start of a new project it is advisable to make a back up of the database on the Vault and then clear it from the system. Doing this will prevent the Vault from reporting clashing media names during the new project if a name matches media from the previous project.

Follow these steps to perform this process:

1. Connect a keyboard to one of the USB ports on the Vault.

2. Press the keys CTRL-ALT-F2 at the same time. This will take you to the Linux login screen.

3. Enter the username **root** and password **codex**. Be aware that when logged in as root user you can move or delete any file on the system, so be careful when executing commands.

4. Enter this command to close the Vault software:

```
telinit 3
```

5. The database file is called **localdb** and is stored in the /etc/codex directory. Decide on what you want to call the backup of the file - it is normally helpful to include the date and also the project name as part of the new filename for reference. For example, you may choose to call it:

localdb_20130114_MyProjectBackup

Spaces in filenames should be avoided. To create this renamed backup of the localdb file, enter a command like this:

```
mv /etc/codex/localdb /etc/codex/localdb_20130114_MyProjectBackup
```

This will rename the original file localdb to be localdb_20130114_MyProjectBackup and it will remain in the /etc/codex directory.

6. Now enter the following command to restart the Vault:

```
reboot
```

21. Using a keyboard and mouse with the Vault software

If you want to use a USB keyboard and mouse with the Vault, connect them and then press ctrl-T on the keyboard. This disables the touchscreen allowing a keyboard and mouse to be used.

Notes

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